



PATENT  
P53821C

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES**

Appeal No. \_\_\_\_\_

In re Application of:

Richard G. Hyatt Jr.

Serial No.: 08/720,070

Examiner: Suzanne Lale Dino Barrett

Filed: 27 September 1996

Art Unit: 3673

For: ELECTROMECHANICAL CYLINDER PLUG

**Attn: Board of Patent Appeals & Interferences**

**Paper No. 118**

**SUPPLEMENTAL SUBSTITUTE APPEAL BRIEF**

**Mail Stop Appeal Brief-Patents**

Commissioner for Patents

P.O.Box 1450

Alexandria, VA 22313-1450

Sir:

Supplemental to the Substitute Appeal Brief timely filed on 26 October 2009, entry of the Supplemental Substitute Appeal Brief is respectfully requested. It is noted that the 26 October 2009 Substitute Appeal Brief was printed double-sided due to the Examiner's requirement for separate statement for each independent claim, which caused the size of the Brief to bloom beyond the capacity of the U.S. postal service to handle in the late night mailing.

In response to the Notification of Non-Compliant Appeal Brief dated 26 August 2009 (Paper No. 20090824), and pursuant to Appellant's Notice of Appeal filed on 18 March 2009, Appellant hereby appeals to the Board of Patent Appeals and Interferences from the rejection of claims 1-14, 16-19, 21 and 22, as set forth in the second office action mailed on 23 May 2006 (Paper No. 20060515).

Folio: P53821C

Date: 4/29/10

I.D.: REB/kf

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**I. REAL PARTY IN INTEREST**

Pursuant to 37 C.F.R. §41.37(c)(1)(as amended), the real party in interest is:

Richard G. Hyatt, Jr.,

the sole inventor of the subject matter defined by the pending claims.

## II. RELATED APPEALS AND INTERFERENCES

In Application Serial No. **10/440308** which is a Continuation of Application Serial No. 10/061202, which is a Continuation of the present application, a Notice of Appeal was filed on 8 November 2004. On 19 February 2009, a Decision was mailed, in which Appellant's Petition to enter the Reply Brief and the Substitute Reply Brief filed on 7 July 2006 and 11 October 2006, respectively, was denied.

In Application Serial No. **11/892305** which is a Divisional of the present application, a Notice of Appeal was filed on 10 November 2008. On 27 January 2009, a Notification of Non-Compliant Appeal Brief (Paper No. 20090122) was issued in response to the Appeal Brief filed on 9 December 2008. A substitute Appeal Brief in response to the Notification of 27 January 2009 was filed on 27 May 2009 and has been forwarded to the Examiner.



### **III. STATUS OF CLAIMS**

Claims 57-63, 85-89, 101-104, 117 and 118 have been canceled.

Claims 1-26, 28, 30-42, 46-52, 54-56, 64-70, 75-77, 82-84, 90-93, 95-100, 105-116 and 119-121 stand finally rejected and are appealed herein.

Claims 43 through 45, 73 and 94 have been withdrawn from consideration while claims 27, 29, 53, 71, 72, 74 and 78 through 81 have been objected to.

#### **IV. STATUS OF AMENDMENTS**

No Amendment was filed subsequent to the final rejection of 18 December 2008.

## V. SUMMARY OF CLAIMED SUBJECT MATTER

### 1. Compliance With The Requirement Imposed By Paper No. 20090726

Paper No. 20090824 entitled *Notification of Non-Compliant Appeal Brief* (37 CFR 41.37)

inaccurately stated that:

“4. (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).”

Paper No. 20090824 further asserted that:

“(4) The ‘Summary of Claimed Subject Matter’ fails to argue each independent claim separately, which shall refer to the specification by page and line number and to the drawings, if any.”

**First**, the statement written in Paper No. 20090726 is explicitly contradicted by the actual text of Applicants’ Appeal Brief. Appellants have in fact identified “for each independent claim involved in the appeal for each dependent claim argued separately, every means plus function ... the structure .... described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings ... by reference characters”, and additionally by reference to the specific claims defining the means plus function feature.

**Second**, the statement that,

“(4) The ‘Summary of Claimed Subject Matter’ fails to argue each independent claim separately, which shall refer to the specification by page and line number and to the drawings, if any,”

is inconsistent, as a matter of fact, with the separate argument of each of the independent claims throughout Appellant’s Arguments. The fact that in some instances, some of Appellant’s Arguments collectively discusses several claims while referring to a feature of more than a single independent claim, does not negate Appellant’s conformance with 37 CFR 41.37(c)(1)(v), because a collective discussion of a feature common to several claims is an economy of words.

Appellant respectfully submits that the foregoing demonstration of complete compliance beyond that required by 37 C.F.R. §41.37(c)(1)(v) has been demonstrated, together with the inaccuracy and incompleteness under 37 CFR §1.104 of Paper No. 20090824, of the statement set forth in Paper No. 20090824.

## **2. Compliance With The Requirement Imposed By Paper No. 20100325**

Paper No. 20100325

entitled *Notification of Non-Compliant Appeal Brief (37 CFR 41.37)* again stated that:

“4. (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112,

sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).”

Paper No. 20100325 further asserted that:

“10. Applicant’s appeal brief fails to comply with 37 CFR §§ previously indicated in the *Notice of Non-compliant Appeal Brief* mailed 8/26/09. Appellant has mapped generally from the specification and parts of the independent claims, but each of the independent claims has not been properly mapped. Applicant is required to set forth the claim language of each independent claim separately and in its entirety and map to the specification.”

**First**, the statement written in Paper No. 20100325 is again contradicted by the actual text of Appellant’s Appeal Brief because Appellant has in fact identified “for each independent claim involved in the appeal for each dependent claim argued separately, every means plus function ... the structure .... described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings ... by reference characters”, and additionally by reference to the specific claims defining the means plus function feature.

**Second**, only the first sentence of 37 CFR 41.37(c)(1)(v) is applicable to claims here, and the concise explanation of the subject matter defined by the appealed claims is in point-of-fact, referred to by the page and line number of the specification, and to the drawings. For those appealed claims free of “means plus functions” limitations, 37 CFR 41.37(c)(1)(v) does not require that each claim be repeated *verbatim* in this concise explanation, or that each claim appealed be separately made the object of a discrete concise explanation.

**Third**, the statement written in Paper No. 20100325 improperly suggest that mandates that the Appellant “is required to set forth the claim language of each independent claim separately and in it’s entirety;” in point-of-fact, 37 CFR 41.37(c)(1)(v) does not state that an appellant “is required to set forth the claim language of each independent claim separately and in it’s entirety.” Such an interpretation would necessitate duplication of the pending claims twice, once within the Summary of the Invention, once within the Arguments, and for a third time within the Appendix of Claims. Appellant respectfully submits that this Appeal Brief is already lengthy, and that one more repetition of the claim would not be of assistance to the readers.

### **3. Compliance With 37 CFR §41.37(c)(1)(v)**

#### **Claim 1**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant’s claim 1 disfines a hierarchically<sup>1</sup> adaptable lock 100<sup>2</sup> by using a removable cylindrical plug 101<sup>3</sup> that is rotatably held with a lock cylinder 102<sup>4</sup> of a

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<sup>1</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>2</sup> Page 10, lines 1 and 4.

<sup>3</sup> Page 10, lines 6, 11, 13 and 19.

<sup>4</sup> Beginning with page 10, line 4.

locking mechanism. The plug has an exposed terminal face base 72<sup>5</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>6</sup> 106, 107, 108,<sup>7</sup> or simply a key retaining mechanism<sup>8</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>9</sup> able to rotate a cam 103<sup>10</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>11</sup> after insertion of a blade of a properly bitted and

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<sup>5</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>6</sup> Page 20, line 12.

<sup>7</sup> Page 12, beginning with line 20.

<sup>8</sup> Page 12, beginning with line 5.

<sup>9</sup> Page 11, line 16.

<sup>10</sup> Page 11, line 13.

<sup>11</sup> Page 22, line 18.

profiled key 200,<sup>12</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>13</sup> 106, 107, 108<sup>14</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>15</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>16</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>17</sup> enables rotation of plug 101<sup>18</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>19</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication

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<sup>12</sup> Page 10, line 14, and page 23, line 5.

<sup>13</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>14</sup> Page 12, beginning with line 20.

<sup>15</sup> Page 11, beginning with line 5.

<sup>16</sup> Page 22, beginning with line 18.

<sup>17</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>18</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>19</sup> Page 22, beginning with line 12.



and comparison of encoded data.<sup>20</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>21</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>22</sup> within pin cylinders 80, 82<sup>23</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>24</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim 1 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>25</sup>

#### **Claim 6**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page

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<sup>20</sup> Page 22, beginning with line 14.

<sup>21</sup> Page 22, beginning with line 18.

<sup>22</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) “tooth corresponding to the cylinder occupied by solenoid 105b”. See, page 20, line 21 and page 21, lines 1 and 2.

<sup>23</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>24</sup> Page 21, lines 8-11.

<sup>25</sup> 37 CFR §41.37(c)(1)(v).

9, line 20 of the specification, Appellant's claim 6 discloses a hierarchically<sup>26</sup> adaptable lock 100<sup>27</sup> by using a removable cylindrical plug 101<sup>28</sup> that is rotatably held with a lock cylinder 102<sup>29</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>30</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>31</sup> 106, 107, 108,<sup>32</sup> or simply a key retaining mechanism<sup>33</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>34</sup> able to rotate a cam 103<sup>35</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety

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<sup>26</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>27</sup> Page 10, lines 1 and 4.

<sup>28</sup> Page 10, lines 6, 11, 13 and 19.

<sup>29</sup> Beginning with page 10, line 4.

<sup>30</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>31</sup> Page 20, line 12.

<sup>32</sup> Page 12, beginning with line 20.

<sup>33</sup> Page 12, beginning with line 5.

<sup>34</sup> Page 11, line 16.

<sup>35</sup> Page 11, line 13.

degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>36</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>37</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>38</sup> 106, 107, 108<sup>39</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>40</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>41</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>42</sup> enables rotation of plug 101<sup>43</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM

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<sup>36</sup> Page 22, line 18.

<sup>37</sup> Page 10, line 14, and page 23, line 5.

<sup>38</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>39</sup> Page 12, beginning with line 20.

<sup>40</sup> Page 11, beginning with line 5.

<sup>41</sup> Page 22, beginning with line 18.

<sup>42</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>43</sup> Illustrated with different implementations, in Figures 1 through 15.

and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>44</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>45</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>46</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>47</sup> within pin cylinders 80, 82<sup>48</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>49</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim

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<sup>44</sup> Page 22, beginning with line 12.

<sup>45</sup> Page 22, beginning with line 14.

<sup>46</sup> Page 22, beginning with line 18.

<sup>47</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) "tooth corresponding to the cylinder occupied by solenoid 105b". See, page 20, line 21 and page 21, lines 1 and 2.

<sup>48</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>49</sup> Page 21, lines 8-11.

6 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>50</sup>

**Claim 6**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant’s claim 6 discloses a hierarchically<sup>51</sup> adaptable lock 100<sup>52</sup> by using a removable cylindrical plug 101<sup>53</sup> that is rotatably held with a lock cylinder 102<sup>54</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>55</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>56</sup> 106, 107, 108,<sup>57</sup> or simply a key retaining mechanism<sup>58</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug

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<sup>50</sup> 37 CFR §41.37(c)(1)(v).

<sup>51</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>52</sup> Page 10, lines 1 and 4.

<sup>53</sup> Page 10, lines 6, 11, 13 and 19.

<sup>54</sup> Beginning with page 10, line 4.

<sup>55</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>56</sup> Page 20, line 12.

<sup>57</sup> Page 12, beginning with line 20.

<sup>58</sup> Page 12, beginning with line 5.

operationally supports a tailpiece 101q<sup>59</sup> able to rotate a cam 103<sup>60</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>61</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>62</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>63</sup> 106, 107, 108<sup>64</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>65</sup> or in the embodiments constructed without

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<sup>59</sup> Page 11, line 16.

<sup>60</sup> Page 11, line 13.

<sup>61</sup> Page 22, line 18.

<sup>62</sup> Page 10, line 14, and page 23, line 5.

<sup>63</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>64</sup> Page 12, beginning with line 20.

<sup>65</sup> Page 11, beginning with line 5.

a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>66</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>67</sup> enables rotation of plug 101<sup>68</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>69</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>70</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>71</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin

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<sup>66</sup> Page 22, beginning with line 18.

<sup>67</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>68</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>69</sup> Page 22, beginning with line 12.

<sup>70</sup> Page 22, beginning with line 14.

<sup>71</sup> Page 22, beginning with line 18.

tumblers 101b, or other types of tumblers,<sup>72</sup> within pin cylinders 80, 82<sup>73</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>74</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim 1 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>75</sup>

#### **Claim 11**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant’s claim 11 discloses a hierarchically<sup>76</sup> adaptable lock 100<sup>77</sup> by using a removable cylindrical plug 101<sup>78</sup> that is rotatably held with a lock cylinder 102

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<sup>72</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) “tooth corresponding to the cylinder occupied by solenoid 105b”. See, page 20, line 21 and page 21, lines 1 and 2.

<sup>73</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>74</sup> Page 21, lines 8-11.

<sup>75</sup> 37 CFR §41.37(c)(1)(v).

<sup>76</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>77</sup> Page 10, lines 1 and 4.

<sup>78</sup> Page 10, lines 6, 11, 13 and 19.



<sup>79</sup>of a locking mechanism. The plug has an exposed terminal face base 72<sup>80</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>81</sup> 106, 107, 108,<sup>82</sup> or simply a key retaining mechanism<sup>83</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>84</sup> able to rotate a cam 103<sup>85</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>86</sup> after insertion of a blade of a properly bitted and

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<sup>79</sup> Beginning with page 10, line 4.

<sup>80</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>81</sup> Page 20, line 12.

<sup>82</sup> Page 12, beginning with line 20.

<sup>83</sup> Page 12, beginning with line 5.

<sup>84</sup> Page 11, line 16.

<sup>85</sup> Page 11, line 13.

<sup>86</sup> Page 22, line 18.

profiled key 200,<sup>87</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>88</sup> 106, 107, 108<sup>89</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>90</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>91</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>92</sup> enables rotation of plug 101<sup>93</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>94</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication

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<sup>87</sup> Page 10, line 14, and page 23, line 5.

<sup>88</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>89</sup> Page 12, beginning with line 20.

<sup>90</sup> Page 11, beginning with line 5.

<sup>91</sup> Page 22, beginning with line 18.

<sup>92</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>93</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>94</sup> Page 22, beginning with line 12.

and comparison of encoded data.<sup>95</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>96</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>97</sup> within pin cylinders 80, 82<sup>98</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>99</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim 11 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>100</sup>

#### **Claim 14**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page

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<sup>95</sup> Page 22, beginning with line 14.

<sup>96</sup> Page 22, beginning with line 18.

<sup>97</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) “tooth corresponding to the cylinder occupied by solenoid 105b”. See, page 20, line 21 and page 21, lines 1 and 2.

<sup>98</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>99</sup> Page 21, lines 8-11.

<sup>100</sup> 37 CFR §41.37(c)(1)(v).

9, line 20 of the specification, Appellant's claim 14 discloses a hierarchically<sup>101</sup> adaptable lock 100<sup>102</sup> by using a removable cylindrical plug 101<sup>103</sup> that is rotatably held with a lock cylinder 102<sup>104</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>105</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>106</sup> 106, 107, 108,<sup>107</sup> or simply a key retaining mechanism<sup>108</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>109</sup> able to rotate a cam 103<sup>110</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety

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<sup>101</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>102</sup> Page 10, lines 1 and 4.

<sup>103</sup> Page 10, lines 6, 11, 13 and 19.

<sup>104</sup> Beginning with page 10, line 4.

<sup>105</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>106</sup> Page 20, line 12.

<sup>107</sup> Page 12, beginning with line 20.

<sup>108</sup> Page 12, beginning with line 5.

<sup>109</sup> Page 11, line 16.

<sup>110</sup> Page 11, line 13.

degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>111</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>112</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>113</sup> 106, 107, 108<sup>114</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>115</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>116</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>117</sup> enables rotation of plug 101<sup>118</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic

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<sup>111</sup> Page 22, line 18.

<sup>112</sup> Page 10, line 14, and page 23, line 5.

<sup>113</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>114</sup> Page 12, beginning with line 20.

<sup>115</sup> Page 11, beginning with line 5.

<sup>116</sup> Page 22, beginning with line 18.

<sup>117</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>118</sup> Illustrated with different implementations, in Figures 1 through 15.

memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>119</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>120</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>121</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>122</sup> within pin cylinders 80, 82<sup>123</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>124</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim

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<sup>119</sup> Page 22, beginning with line 12.

<sup>120</sup> Page 22, beginning with line 14.

<sup>121</sup> Page 22, beginning with line 18.

<sup>122</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) "tooth corresponding to the cylinder occupied by solenoid 105b". See, page 20, line 21 and page 21, lines 1 and 2.

<sup>123</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>124</sup> Page 21, lines 8-11.

14 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>125</sup>

### **Claim 25**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant’s claim 25 discloses a hierarchically<sup>126</sup> adaptable lock 100<sup>127</sup> by using a removable cylindrical plug 101<sup>128</sup> that is rotatably held with a lock cylinder 102<sup>129</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>130</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>131</sup> 106, 107, 108,<sup>132</sup> or simply a key retaining mechanism<sup>133</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base

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<sup>125</sup> 37 CFR §41.37(c)(1)(v).

<sup>126</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>127</sup> Page 10, lines 1 and 4.

<sup>128</sup> Page 10, lines 6, 11, 13 and 19.

<sup>129</sup> Beginning with page 10, line 4.

<sup>130</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>131</sup> Page 20, line 12.

<sup>132</sup> Page 12, beginning with line 20.

<sup>133</sup> Page 12, beginning with line 5.

of the plug operationally supports a tailpiece 101q<sup>134</sup> able to rotate a cam 103<sup>135</sup> and position a bolt of the locking mechanism when when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>136</sup> if an embodiment employs a bitted key, after insertion of a blade of a properly bitted and profiled key 200,<sup>137</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>138</sup> 106, 107, 108<sup>139</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>140</sup> or in the embodiments constructed without a mechanical locking mechanism,

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<sup>134</sup> Page 11, line 16.

<sup>135</sup> Page 11, line 13.

<sup>136</sup> Page 22, line 18.

<sup>137</sup> Page 10, line 14, and page 23, line 5.

<sup>138</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>139</sup> Page 12, beginning with line 20.

<sup>140</sup> Page 11, beginning with line 5.



simple activation of the electrical operator 105, 106, 107, 108,<sup>141</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>142</sup> enables rotation of plug 101<sup>143</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>144</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>145</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>146</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>147</sup> within pin cylinders 80, 82<sup>148</sup>. Alternatively, a lock

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<sup>141</sup> Page 22, beginning with line 18.

<sup>142</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>143</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>144</sup> Page 22, beginning with line 12.

<sup>145</sup> Page 22, beginning with line 14.

<sup>146</sup> Page 22, beginning with line 18.

<sup>147</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) "tooth corresponding to the cylinder occupied by solenoid 105b". See, page 20, line 21 and page 21, lines 1 and 2.

<sup>148</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>149</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim 25 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>150</sup>

**Claim 46**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant’s claim 46 discloses a hierarchically<sup>151</sup> adaptable lock 100<sup>152</sup> by using a removable cylindrical plug 101<sup>153</sup> that is rotatably held with a lock cylinder 102<sup>154</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>155</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator

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<sup>149</sup> Page 21, lines 8-11.

<sup>150</sup> 37 CFR §41.37(c)(1)(v).

<sup>151</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>152</sup> Page 10, lines 1 and 4.

<sup>153</sup> Page 10, lines 6, 11, 13 and 19.

<sup>154</sup> Beginning with page 10, line 4.

<sup>155</sup> Page 10, lines 6 and 7, and page 20, line 16.

105,<sup>156</sup> 106, 107, 108,<sup>157</sup> or simply a key retaining mechanism<sup>158</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>159</sup> able to rotate a cam 103<sup>160</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between a bar such as blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>161</sup> if a particular embodiment of the principles of the invention uses a bitted key, after insertion of a blade of a properly bitted and profiled key 200,<sup>162</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical

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<sup>156</sup> Page 20, line 12.

<sup>157</sup> Page 12, beginning with line 20.

<sup>158</sup> Page 12, beginning with line 5.

<sup>159</sup> Page 11, line 16.

<sup>160</sup> Page 11, line 13.

<sup>161</sup> Page 22, line 18.

<sup>162</sup> Page 10, line 14, and page 23, line 5.

operators 105,<sup>163</sup> 106, 107, 108<sup>164</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>165</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>166</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>167</sup> enables rotation of plug 101<sup>168</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>169</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>170</sup>

Integration of an electrical operator with a locking mechanism may be achieved by

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<sup>163</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>164</sup> Page 12, beginning with line 20.

<sup>165</sup> Page 11, beginning with line 5.

<sup>166</sup> Page 22, beginning with line 18.

<sup>167</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>168</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>169</sup> Page 22, beginning with line 12.

<sup>170</sup> Page 22, beginning with line 14.

incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>171</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>172</sup> within pin cylinders 80, 82<sup>173</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>174</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim 46 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>175</sup>

#### **Claim 56**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant’s claim 56 discloses a hierarchically<sup>176</sup> adaptable lock

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<sup>171</sup> Page 22, beginning with line 18.

<sup>172</sup> With a concomitant re-biting of the corresponding key to omit from the blade of the key any (or each) “tooth corresponding to the cylinder occupied by solenoid 105b”. See, page 20, line 21 and page 21, lines 1 and 2.

<sup>173</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>174</sup> Page 21, lines 8-11.

<sup>175</sup> 37 CFR §41.37(c)(1)(v).

<sup>176</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

100<sup>177</sup> by using a removable cylindrical plug 101<sup>178</sup> that is rotatably held with a lock cylinder 102<sup>179</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>180</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>181</sup> 106, 107, 108,<sup>182</sup> or simply a key retaining mechanism<sup>183</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>184</sup> able to rotate a cam 103<sup>185</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b contained wholly with the cylinder plug, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between an elongate member such as, by way of

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<sup>177</sup> Page 10, lines 1 and 4.

<sup>178</sup> Page 10, lines 6, 11, 13 and 19.

<sup>179</sup> Beginning with page 10, line 4.

<sup>180</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>181</sup> Page 20, line 12.

<sup>182</sup> Page 12, beginning with line 20.

<sup>183</sup> Page 12, beginning with line 5.

<sup>184</sup> Page 11, line 16.

<sup>185</sup> Page 11, line 13.

example, blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>186</sup> if an embodiment of the principles of the present invention use a bitted key, after insertion of a blade of a properly bitted and profiled key 200,<sup>187</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>188</sup> 106, 107, 108<sup>189</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>190</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>191</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>192</sup> enables rotation of plug 101<sup>193</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM

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<sup>186</sup> Page 22, line 18.

<sup>187</sup> Page 10, line 14, and page 23, line 5.

<sup>188</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>189</sup> Page 12, beginning with line 20.

<sup>190</sup> Page 11, beginning with line 5.

<sup>191</sup> Page 22, beginning with line 18.

<sup>192</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>193</sup> Illustrated with different implementations, in Figures 1 through 15.

and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>194</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>195</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>196</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>197</sup> within pin cylinders 80, 82<sup>198</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>199</sup>

#### **Claim 64**

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<sup>194</sup> Page 22, beginning with line 12.

<sup>195</sup> Page 22, beginning with line 14.

<sup>196</sup> Page 22, beginning with line 18.

<sup>197</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) "tooth corresponding to the cylinder occupied by solenoid 105b". See, page 20, line 21 and page 21, lines 1 and 2.

<sup>198</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>199</sup> Page 21, lines 8-11.



Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant's claim 64 discloses a hierarchically<sup>200</sup> adaptable lock 100<sup>201</sup> by using a removable cylindrical plug 101<sup>202</sup> that is rotatably held with a lock cylinder 102<sup>203</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>204</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>205</sup> 106, 107, 108,<sup>206</sup> or simply a key retaining mechanism<sup>207</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>208</sup> able to rotate a cam 103<sup>209</sup> and position a bolt of the locking mechanism when the electrical operator is within a position that does not block a second portion of the sidebar and another component of the lock does not block a first portion of

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<sup>200</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>201</sup> Page 10, lines 1 and 4.

<sup>202</sup> Page 10, lines 6, 11, 13 and 19.

<sup>203</sup> Beginning with page 10, line 4.

<sup>204</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>205</sup> Page 20, line 12.

<sup>206</sup> Page 12, beginning with line 20.

<sup>207</sup> Page 12, beginning with line 5.

<sup>208</sup> Page 11, line 16.

<sup>209</sup> Page 11, line 13.

the sidebar.

Referring additionally to Figure 18,<sup>210</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>211</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>212</sup> 106, 107, 108<sup>213</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>214</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>215</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>216</sup> enables rotation of plug 101<sup>217</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>218</sup> may be

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<sup>210</sup> Page 22, line 18.

<sup>211</sup> Page 10, line 14, and page 23, line 5.

<sup>212</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>213</sup> Page 12, beginning with line 20.

<sup>214</sup> Page 11, beginning with line 5.

<sup>215</sup> Page 22, beginning with line 18.

<sup>216</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>217</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>218</sup> Page 22, beginning with line 12.

electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>219</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>220</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>221</sup> within pin cylinders 80, 82<sup>222</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>223</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim 64 does not use either “means plus function” or “step plus function” definitions under the sixth

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<sup>219</sup> Page 22, beginning with line 14.

<sup>220</sup> Page 22, beginning with line 18.

<sup>221</sup> With a concomitant re-biting of the corresponding key to omit from the blade of the key any (or each) “tooth corresponding to the cylinder occupied by solenoid 105b”. See, page 20, line 21 and page 21, lines 1 and 2.

<sup>222</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>223</sup> Page 21, lines 8-11.

paragraph of 35 U.S.C. §112.<sup>224</sup>

### **Claim 65**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant's claim 65 discloses a hierarchically<sup>225</sup> adaptable lock 100<sup>226</sup> by using a removable cylindrical plug 101<sup>227</sup> that is rotatably held with a lock cylinder 102<sup>228</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>229</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>230</sup> 106, 107, 108,<sup>231</sup> or simply a key retaining mechanism<sup>232</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base

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<sup>224</sup> 37 CFR §41.37(c)(1)(v).

<sup>225</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>226</sup> Page 10, lines 1 and 4.

<sup>227</sup> Page 10, lines 6, 11, 13 and 19.

<sup>228</sup> Beginning with page 10, line 4.

<sup>229</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>230</sup> Page 20, line 12.

<sup>231</sup> Page 12, beginning with line 20.

<sup>232</sup> Page 12, beginning with line 5.

of the plug operationally supports a tailpiece 101q<sup>233</sup> able to rotate a cam 103<sup>234</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between a blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

When a bitted key is used in an embodiment of the principles of the invention, and referring additionally to Figure 18,<sup>235</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>236</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>237</sup> 106, 107, 108<sup>238</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>239</sup> or in the embodiments constructed without

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<sup>233</sup> Page 11, line 16.

<sup>234</sup> Page 11, line 13.

<sup>235</sup> Page 22, line 18.

<sup>236</sup> Page 10, line 14, and page 23, line 5.

<sup>237</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>238</sup> Page 12, beginning with line 20.

<sup>239</sup> Page 11, beginning with line 5.

a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>240</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>241</sup> enables rotation of plug 101<sup>242</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>243</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>244</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>245</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin

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<sup>240</sup> Page 22, beginning with line 18.

<sup>241</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>242</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>243</sup> Page 22, beginning with line 12.

<sup>244</sup> Page 22, beginning with line 14.

<sup>245</sup> Page 22, beginning with line 18.

tumblers 101b, or other types of tumblers,<sup>246</sup> within pin cylinders 80, 82<sup>247</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>248</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim 65 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>249</sup>

#### **Claim 70**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant’s claim 70 discloses a hierarchically<sup>250</sup> adaptable lock 100<sup>251</sup> by using a removable cylindrical plug 101<sup>252</sup> that is rotatably held with a lock cylinder 102

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<sup>246</sup> With a concomitant re-biting of the corresponding key to omit from the blade of the key any (or each) “tooth corresponding to the cylinder occupied by solenoid 105b”. See, page 20, line 21 and page 21, lines 1 and 2.

<sup>247</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>248</sup> Page 21, lines 8-11.

<sup>249</sup> 37 CFR §41.37(c)(1)(v).

<sup>250</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>251</sup> Page 10, lines 1 and 4.

<sup>252</sup> Page 10, lines 6, 11, 13 and 19.

<sup>253</sup>of a locking mechanism. The plug has an exposed terminal face base 72<sup>254</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>255</sup> 106, 107, 108,<sup>256</sup> or simply a key retaining mechanism<sup>257</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>258</sup> able to rotate a cam 103<sup>259</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A (that is, move along a geometric construct other than the radial plane along which a bar interposed between the shell and cylinder plug travels) and thereby alter the positional relation between, by way of example, blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

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<sup>253</sup> Beginning with page 10, line 4.

<sup>254</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>255</sup> Page 20, line 12.

<sup>256</sup> Page 12, beginning with line 20.

<sup>257</sup> Page 12, beginning with line 5.

<sup>258</sup> Page 11, line 16.

<sup>259</sup> Page 11, line 13.



When an embodiment of claim 70 uses a bitted key, reference additionally to Figure 18,<sup>260</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>261</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>262</sup> 106, 107, 108<sup>263</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>264</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>265</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>266</sup> enables rotation of plug 101<sup>267</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>268</sup> may be electrically interposed between the electrical

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<sup>260</sup> Page 22, line 18.

<sup>261</sup> Page 10, line 14, and page 23, line 5.

<sup>262</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>263</sup> Page 12, beginning with line 20.

<sup>264</sup> Page 11, beginning with line 5.

<sup>265</sup> Page 22, beginning with line 18.

<sup>266</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>267</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>268</sup> Page 22, beginning with line 12.

operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>269</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>270</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>271</sup> within pin cylinders 80, 82<sup>272</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>273</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim 70 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>274</sup>

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<sup>269</sup> Page 22, beginning with line 14.

<sup>270</sup> Page 22, beginning with line 18.

<sup>271</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) “tooth corresponding to the cylinder occupied by solenoid 105b”. See, page 20, line 21 and page 21, lines 1 and 2.

<sup>272</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>273</sup> Page 21, lines 8-11.

<sup>274</sup> 37 CFR §41.37(c)(1)(v).

**Claim 75**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant's claim 75 discloses a hierarchically<sup>275</sup> adaptable lock 100<sup>276</sup> by using a removable cylindrical plug 101<sup>277</sup> that is rotatably held with a lock cylinder 102<sup>278</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>279</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>280</sup> 106, 107, 108,<sup>281</sup> or simply a key retaining mechanism<sup>282</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>283</sup> able to rotate a cam 103<sup>284</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b,

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<sup>275</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>276</sup> Page 10, lines 1 and 4.

<sup>277</sup> Page 10, lines 6, 11, 13 and 19.

<sup>278</sup> Beginning with page 10, line 4.

<sup>279</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>280</sup> Page 20, line 12.

<sup>281</sup> Page 12, beginning with line 20.

<sup>282</sup> Page 12, beginning with line 5.

<sup>283</sup> Page 11, line 16.

<sup>284</sup> Page 11, line 13.

107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between a blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>285</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>286</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>287</sup> 106, 107, 108<sup>288</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>289</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>290</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b,

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<sup>285</sup> Page 22, line 18.

<sup>286</sup> Page 10, line 14, and page 23, line 5.

<sup>287</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>288</sup> Page 12, beginning with line 20.

<sup>289</sup> Page 11, beginning with line 5.

<sup>290</sup> Page 22, beginning with line 18.

107b, 108b,<sup>291</sup> enables rotation of plug 101<sup>292</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>293</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>294</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>295</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>296</sup> within pin cylinders 80, 82<sup>297</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation,

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<sup>291</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>292</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>293</sup> Page 22, beginning with line 12.

<sup>294</sup> Page 22, beginning with line 14.

<sup>295</sup> Page 22, beginning with line 18.

<sup>296</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) "tooth corresponding to the cylinder occupied by solenoid 105b". See, page 20, line 21 and page 21, lines 1 and 2.

<sup>297</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>298</sup>

**Claim 76**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant's claim 76 discloses a hierarchically<sup>299</sup> adaptable lock 100<sup>300</sup> by using a removable cylindrical plug 101<sup>301</sup> that is rotatably held with a lock cylinder 102<sup>302</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>303</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>304</sup> 106, 107, 108,<sup>305</sup> or simply a key retaining mechanism<sup>306</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base

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<sup>298</sup> Page 21, lines 8-11.

<sup>299</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>300</sup> Page 10, lines 1 and 4.

<sup>301</sup> Page 10, lines 6, 11, 13 and 19.

<sup>302</sup> Beginning with page 10, line 4.

<sup>303</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>304</sup> Page 20, line 12.

<sup>305</sup> Page 12, beginning with line 20.

<sup>306</sup> Page 12, beginning with line 5.

of the plug operationally supports a tailpiece 101q<sup>307</sup> able to rotate a cam 103<sup>308</sup> and position a bolt of the locking mechanism. Referring additionally to Figure 18,<sup>309</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>310</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>311</sup> 106, 107, 108<sup>312</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>313</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>314</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>315</sup> enables rotation of plug 101<sup>316</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory

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<sup>307</sup> Page 11, line 16.

<sup>308</sup> Page 11, line 13.

<sup>309</sup> Page 22, line 18.

<sup>310</sup> Page 10, line 14, and page 23, line 5.

<sup>311</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>312</sup> Page 12, beginning with line 20.

<sup>313</sup> Page 11, beginning with line 5.

<sup>314</sup> Page 22, beginning with line 18.

<sup>315</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>316</sup> Illustrated with different implementations, in Figures 1 through 15.

ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>317</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>318</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>319</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>320</sup> within pin cylinders 80, 82<sup>321</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>322</sup>

#### **Claim 77**

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<sup>317</sup> Page 22, beginning with line 12.

<sup>318</sup> Page 22, beginning with line 14.

<sup>319</sup> Page 22, beginning with line 18.

<sup>320</sup> With a concomitant re-biting of the corresponding key to omit from the blade of the key any (or each) "tooth corresponding to the cylinder occupied by solenoid 105b". See, page 20, line 21 and page 21, lines 1 and 2.

<sup>321</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>322</sup> Page 21, lines 8-11.



Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant's claim 77 discloses a hierarchically<sup>323</sup> adaptable lock 100<sup>324</sup> by using a removable cylindrical plug 101<sup>325</sup> that is rotatably held with a lock cylinder 102<sup>326</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>327</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>328</sup> 106, 107, 108,<sup>329</sup> or simply a key retaining mechanism<sup>330</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>331</sup> able to rotate a cam 103<sup>332</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially

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<sup>323</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>324</sup> Page 10, lines 1 and 4.

<sup>325</sup> Page 10, lines 6, 11, 13 and 19.

<sup>326</sup> Beginning with page 10, line 4.

<sup>327</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>328</sup> Page 20, line 12.

<sup>329</sup> Page 12, beginning with line 20.

<sup>330</sup> Page 12, beginning with line 5.

<sup>331</sup> Page 11, line 16.

<sup>332</sup> Page 11, line 13.

through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>333</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>334</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>335</sup> 106, 107, 108<sup>336</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>337</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>338</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>339</sup> enables rotation of plug 101<sup>340</sup> within the bore of cylinder 102 as torque is

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<sup>333</sup> Page 22, line 18.

<sup>334</sup> Page 10, line 14, and page 23, line 5.

<sup>335</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>336</sup> Page 12, beginning with line 20.

<sup>337</sup> Page 11, beginning with line 5.

<sup>338</sup> Page 22, beginning with line 18.

<sup>339</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>340</sup> Illustrated with different implementations, in Figures 1 through 15.

manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>341</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>342</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>343</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>344</sup> within pin cylinders 80, 82<sup>345</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>346</sup>

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<sup>341</sup> Page 22, beginning with line 12.

<sup>342</sup> Page 22, beginning with line 14.

<sup>343</sup> Page 22, beginning with line 18.

<sup>344</sup> With a concomitant re-biting of the corresponding key to omit from the blade of the key any (or each) "tooth corresponding to the cylinder occupied by solenoid 105b". See, page 20, line 21 and page 21, lines 1 and 2.

<sup>345</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>346</sup> Page 21, lines 8-11.

**Claim 90**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant's claim 90 discloses a hierarchically<sup>347</sup> adaptable lock 100<sup>348</sup> by using a removable cylindrical plug 101<sup>349</sup> that is rotatably held with a lock cylinder 102<sup>350</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>351</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>352</sup> 106, 107, 108,<sup>353</sup> or simply a key retaining mechanism<sup>354</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>355</sup> able to rotate a cam 103<sup>356</sup> and position a bolt

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<sup>347</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>348</sup> Page 10, lines 1 and 4.

<sup>349</sup> Page 10, lines 6, 11, 13 and 19.

<sup>350</sup> Beginning with page 10, line 4.

<sup>351</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>352</sup> Page 20, line 12.

<sup>353</sup> Page 12, beginning with line 20.

<sup>354</sup> Page 12, beginning with line 5.

<sup>355</sup> Page 11, line 16.

<sup>356</sup> Page 11, line 13.

of the locking mechanism. Referring additionally to Figure 18,<sup>357</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>358</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>359</sup> 106, 107, 108<sup>360</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>361</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>362</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>363</sup> enables rotation of plug 101<sup>364</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>365</sup> may be electrically interposed between the electrical operator and the electrical

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<sup>357</sup> Page 22, line 18.

<sup>358</sup> Page 10, line 14, and page 23, line 5.

<sup>359</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>360</sup> Page 12, beginning with line 20.

<sup>361</sup> Page 11, beginning with line 5.

<sup>362</sup> Page 22, beginning with line 18.

<sup>363</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>364</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>365</sup> Page 22, beginning with line 12.

contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>366</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>367</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>368</sup> within pin cylinders 80, 82<sup>369</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>370</sup>

#### **Claim 91**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page

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<sup>366</sup> Page 22, beginning with line 14.

<sup>367</sup> Page 22, beginning with line 18.

<sup>368</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) "tooth corresponding to the cylinder occupied by solenoid 105b". See, page 20, line 21 and page 21, lines 1 and 2.

<sup>369</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>370</sup> Page 21, lines 8-11.

9, line 20 of the specification, Appellant's claim 91 discloses a hierarchically<sup>371</sup> adaptable lock 100<sup>372</sup> by using a removable cylindrical plug 101<sup>373</sup> that is rotatably held with a lock cylinder 102<sup>374</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>375</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>376</sup> 106, 107, 108,<sup>377</sup> or simply a key retaining mechanism<sup>378</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>379</sup> able to rotate a cam 103<sup>380</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety

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<sup>371</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>372</sup> Page 10, lines 1 and 4.

<sup>373</sup> Page 10, lines 6, 11, 13 and 19.

<sup>374</sup> Beginning with page 10, line 4.

<sup>375</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>376</sup> Page 20, line 12.

<sup>377</sup> Page 12, beginning with line 20.

<sup>378</sup> Page 12, beginning with line 5.

<sup>379</sup> Page 11, line 16.

<sup>380</sup> Page 11, line 13.

degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>381</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>382</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>383</sup> 106, 107, 108<sup>384</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>385</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>386</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>387</sup> enables rotation of plug 101<sup>388</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic

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<sup>381</sup> Page 22, line 18.

<sup>382</sup> Page 10, line 14, and page 23, line 5.

<sup>383</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>384</sup> Page 12, beginning with line 20.

<sup>385</sup> Page 11, beginning with line 5.

<sup>386</sup> Page 22, beginning with line 18.

<sup>387</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>388</sup> Illustrated with different implementations, in Figures 1 through 15.



memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>389</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>390</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>391</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>392</sup> within pin cylinders 80, 82<sup>393</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>394</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim

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<sup>389</sup> Page 22, beginning with line 12.

<sup>390</sup> Page 22, beginning with line 14.

<sup>391</sup> Page 22, beginning with line 18.

<sup>392</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) "tooth corresponding to the cylinder occupied by solenoid 105b". See, page 20, line 21 and page 21, lines 1 and 2.

<sup>393</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>394</sup> Page 21, lines 8-11.

91 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>395</sup>

**Claim 92**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant’s claim 92 discloses a hierarchically<sup>396</sup> adaptable lock 100<sup>397</sup> by using a removable cylindrical plug 101<sup>398</sup> that is rotatably held with a lock cylinder 102<sup>399</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>400</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>401</sup> 106, 107, 108,<sup>402</sup> or simply a key retaining mechanism<sup>403</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base

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<sup>395</sup> 37 CFR §41.37(c)(1)(v).

<sup>396</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>397</sup> Page 10, lines 1 and 4.

<sup>398</sup> Page 10, lines 6, 11, 13 and 19.

<sup>399</sup> Beginning with page 10, line 4.

<sup>400</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>401</sup> Page 20, line 12.

<sup>402</sup> Page 12, beginning with line 20.

<sup>403</sup> Page 12, beginning with line 5.

of the plug operationally supports a tailpiece 101q<sup>404</sup> able to rotate a cam 103<sup>405</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>406</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>407</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>408</sup> 106, 107, 108<sup>409</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>410</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107,

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<sup>404</sup> Page 11, line 16.

<sup>405</sup> Page 11, line 13.

<sup>406</sup> Page 22, line 18.

<sup>407</sup> Page 10, line 14, and page 23, line 5.

<sup>408</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>409</sup> Page 12, beginning with line 20.

<sup>410</sup> Page 11, beginning with line 5.

108,<sup>411</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>412</sup> enables rotation of plug 101<sup>413</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>414</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>415</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>416</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>417</sup> within pin cylinders 80, 82<sup>418</sup>. Alternatively, a lock

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<sup>411</sup> Page 22, beginning with line 18.

<sup>412</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>413</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>414</sup> Page 22, beginning with line 12.

<sup>415</sup> Page 22, beginning with line 14.

<sup>416</sup> Page 22, beginning with line 18.

<sup>417</sup> With a concomitant re-biting of the corresponding key to omit from the blade of the key any (or each) "tooth corresponding to the cylinder occupied by solenoid 105b". See, page 20, line 21 and page 21, lines 1 and 2.

<sup>418</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>419</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim 46 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>420</sup>

### **Claim 120**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant’s claim 120 discloses a hierarchically<sup>421</sup> adaptable lock 100<sup>422</sup> by using a removable cylindrical plug 101<sup>423</sup> that is rotatably held with a lock cylinder 102<sup>424</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>425</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator

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<sup>419</sup> Page 21, lines 8-11.

<sup>420</sup> 37 CFR §41.37(c)(1)(v).

<sup>421</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.

<sup>422</sup> Page 10, lines 1 and 4.

<sup>423</sup> Page 10, lines 6, 11, 13 and 19.

<sup>424</sup> Beginning with page 10, line 4.

<sup>425</sup> Page 10, lines 6 and 7, and page 20, line 16.

105,<sup>426</sup> 106, 107, 108,<sup>427</sup> or simply a key retaining mechanism<sup>428</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>429</sup> able to rotate a cam 103<sup>430</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A, or 107A protruding from the cylinder, relative to the blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>431</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>432</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the

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<sup>426</sup> Page 20, line 12.

<sup>427</sup> Page 12, beginning with line 20.

<sup>428</sup> Page 12, beginning with line 5.

<sup>429</sup> Page 11, line 16.

<sup>430</sup> Page 11, line 13.

<sup>431</sup> Page 22, line 18.

<sup>432</sup> Page 10, line 14, and page 23, line 5.

electrical operators 105,<sup>433</sup> 106, 107, 108<sup>434</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>435</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>436</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>437</sup> enables rotation of plug 101<sup>438</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>439</sup> may be electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>440</sup>

Integration of an electrical operator with a locking mechanism may be achieved by

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<sup>433</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>434</sup> Page 12, beginning with line 20.

<sup>435</sup> Page 11, beginning with line 5.

<sup>436</sup> Page 22, beginning with line 18.

<sup>437</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>438</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>439</sup> Page 22, beginning with line 12.

<sup>440</sup> Page 22, beginning with line 14.

incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>441</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>442</sup> within pin cylinders 80, 82<sup>443</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>444</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim 46 does not use either “means plus function” or “step plus function” definitions under the sixth paragraph of 35 U.S.C. §112.<sup>445</sup>

### **Claim 121**

Pursuant to 37 CFR §41.37, and referring to Figure 1 through 22 collectively, and page 9, line 20 of the specification, Appellant’s claim 121 discloses a hierarchically<sup>446</sup> adaptable lock

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<sup>441</sup> Page 22, beginning with line 18.

<sup>442</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) “tooth corresponding to the cylinder occupied by solenoid 105b”. See, page 20, line 21 and page 21, lines 1 and 2.

<sup>443</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>444</sup> Page 21, lines 8-11.

<sup>445</sup> 37 CFR §41.37(c)(1)(v).

<sup>446</sup> These hierarchies are particularly illustrated by Figures 19 through 22, and described beginning on page 23, line 4, and continuing through page 24, line 6.



100<sup>447</sup> by using a removable cylindrical plug 101<sup>448</sup> that is rotatably held with a lock cylinder 102<sup>449</sup> of a locking mechanism. The plug has an exposed terminal face base 72<sup>450</sup> perforated by a keyway 101a and a distinct electrical contact aperture 104x. The plug 101 contains either a mechanical locking mechanism, such as a re-keyable tumbler stack 82, and an electrical operator 105,<sup>451</sup> 106, 107, 108,<sup>452</sup> or simply a key retaining mechanism<sup>453</sup> and an electrical operator 105, 106, 107, 108, wholly within the cylindrical exterior surface of the plug 101. The opposite base of the plug operationally supports a tailpiece 101q<sup>454</sup> able to rotate a cam 103<sup>455</sup> and position a bolt of the locking mechanism when electrical current is applied through the particular winding 106b, 107b, 108b, the corresponding shaft 106d, 107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A, or 107A protruding from the cylinder, relative to the

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<sup>447</sup> Page 10, lines 1 and 4.

<sup>448</sup> Page 10, lines 6, 11, 13 and 19.

<sup>449</sup> Beginning with page 10, line 4.

<sup>450</sup> Page 10, lines 6 and 7, and page 20, line 16.

<sup>451</sup> Page 20, line 12.

<sup>452</sup> Page 12, beginning with line 20.

<sup>453</sup> Page 12, beginning with line 5.

<sup>454</sup> Page 11, line 16.

<sup>455</sup> Page 11, line 13.

blocking armature 106a, 107a or 108a.

Referring additionally to Figure 18,<sup>456</sup> after insertion of a blade of a properly bitted and profiled key 200,<sup>457</sup> electrical power from battery 202, or alternatively electrical power and a data signal from the signal generator superimposed upon the electrical power, may be transmitted from electrical circuits of the key to the electrical operator 106b within the plug 101. Activation of the electrical operators 105,<sup>458</sup> 106, 107, 108<sup>459</sup> within the plug 101, in conjunction with correct displacement of the mechanical locking mechanism,<sup>460</sup> or in the embodiments constructed without a mechanical locking mechanism, simple activation of the electrical operator 105, 106, 107, 108,<sup>461</sup> by application of electrical power to one, or more, of the corresponding coils 105b, 106b, 107b, 108b,<sup>462</sup> enables rotation of plug 101<sup>463</sup> within the bore of cylinder 102 as torque is manually applied to the blade of the key 200. An electronic memory ROM, or an electronic memory ROM and an electronic logic circuit  $\mu$ P wholly contained within the plug,<sup>464</sup> may be

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<sup>456</sup> Page 22, line 18.

<sup>457</sup> Page 10, line 14, and page 23, line 5.

<sup>458</sup> Page 20, line 12, although note discussion of blocking armature 105a and solenoid coil 105b, beginning with line 7.

<sup>459</sup> Page 12, beginning with line 20.

<sup>460</sup> Page 11, beginning with line 5.

<sup>461</sup> Page 22, beginning with line 18.

<sup>462</sup> Page 22, beginning with line 18, through page 23, line 3.

<sup>463</sup> Illustrated with different implementations, in Figures 1 through 15.

<sup>464</sup> Page 22, beginning with line 12.

electrically interposed between the electrical operator and the electrical contacts 104x receiving power, or power and data signals, from the key 200, to control the rotation of cylinder plug 101 within cylinder shell 102, and thus govern the operation of lock 100 in dependence upon authentication and comparison of encoded data.<sup>465</sup>

Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, electrical operators 105, 106, 107, 108<sup>466</sup> such as, by way the simplest of examples, the mere substitution electrical operators 105, 106, 107, 108 for pin tumblers 101b, or other types of tumblers,<sup>467</sup> within pin cylinders 80, 82<sup>468</sup>. Alternatively, a lock may be constructed with one, or more, electrical operators functioning without any mechanical locking mechanism simultaneously resident within cylinder plug 101. In either implementation, re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>469</sup>

Contrary to the inference of the Advisory Action, Paper No. 03162005, the appealed claim 46 does not use either “means plus function” or “step plus function” definitions under the sixth

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<sup>465</sup> Page 22, beginning with line 14.

<sup>466</sup> Page 22, beginning with line 18.

<sup>467</sup> With a concomitant re-biting of the corresponding key to omit from the blade of the key any (or each) “tooth corresponding to the cylinder occupied by solenoid 105b”. See, page 20, line 21 and page 21, lines 1 and 2.

<sup>468</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>469</sup> Page 21, lines 8-11.

paragraph of 35 U.S.C. §112.<sup>470</sup>

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<sup>470</sup> 37 CFR §41.37(c)(1)(v).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

### **Claim Rejection Under 35 U.S.C. § 112**

Claims 90 and 120 are rejected under the *first* paragraph of 35 U.S.C. § 112 for lack of enablement.

### **Double Patenting**

Claims 1-5, 11-13, 34, 65-69, 75, 92-100, 112 and 121 are provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1-78 of U.S. Patent No. 6,564,601 to Hyatt Jr.

Claims 1 through 5, 11 through 13, 34, 65 through 69, 75, 92 through 100, 112 and 121 have been improperly rejected under the judicially created doctrine of obviousness-type double patenting based upon Appellant's divisional U.S. Patent No. 6,564,601.

### **Claim Rejections - 35 U.S.C. §103**

Claims 25, 26, 28, 30 through 33, 39 through 42, 46 through 52, 54, through 56, 64, 70, 76, 77, 82 through 84, 90, 91, 105, 107, 108, 109, 111, 113 through 116, and 119 through 121 are patentably distinguishable and allowable under 35 U.S.C. §103(a) over a proposed combination of Gokcebay, U.S. Patent No. 5,552,777 in view of Thordmark *et al.*, U.S. Patent No. 5,542,274 and Naveda, U.S. Patent No. 4,416,127.

## VII. ARGUMENT

### Claim Rejection Under 35 U.S.C. § 112

**I. Claims 90 and 120 are rejected under the *first* paragraph of 35 U.S.C. § 112 for lack of enablement.**

Claims 90 and 120 were rejected under the first paragraph of 35 U.S.C. §112, with an averment that Appellant's specification failed to satisfy the enablement requirement of the first paragraph of 35 U.S.C. §112 because these claims contain "subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and /or use the invention." The rejection is improper for the following reasons.

**First**, it is long settled law under the first paragraph of 35 U.S.C. §112, "that the disclosure of a preferred or exemplary embodiment encompassing a singular element does not, without more, disclaim a plurality embodiment."<sup>471</sup> In *Epistar*, the Federal Circuit explained that a disclosure of in a preferred embodiment of single layer for a "substrate" could not be found to constitute a disclaimer by the Appellant of another embodiment with a substrate comprised of multiple layers. In short, the Examiner's conclusion of law that "[t]he claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art ... to make and/or use the invention" is contrary to settled law of enablement.<sup>472</sup>

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<sup>471</sup> *Epistar Corporation v. International Trade Commission, et al.*, \_\_\_ F.3d \_\_\_, \_\_\_ USPQ 2d. \_\_\_ (Fed. Cir. 22 May 2009);

<sup>472</sup> *KCJ Corp. v. Kinetic Concepts, Inc.* 223 F.3d 1351, 1356 (Fed Cir. 2000), and *AbTox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023 (Fed. Cir. 1997).

**Second**, the Examiner states that the specification fails to provide support for the “at least one electromechanical locking member” and “plurality of electromechanical locking members” set forth in claims 90 and 120, respectively.

Now, the Examiner argues that,

“firstly, the solenoid coils 109, argued on page 69 of the amendment filed 2/24/03, are not disclosed ‘locking members’.”

The Examiner has confused the disclosure in the specification. With reference to Figure 3, by way of example, the “solenoid coils” are identified by reference numbers such as “106d” or “106D”, or in Figure 5A, “108b”, and in Figure 5, as “108b”. The entire assembly however, is readily described as “a plurality of electromechanical locking members.” Moreover, Appellant clearly illustrate three discrete versions of these plurality of electromechanical locking members in Figure 1, and nowhere negates use of more than a single one of these plurality of electromechanical locking members.

The Board’s attention is invited to consider the question of enablement discussed in *Bilstad v. Wakalopulos*, where the Court noted “[T]hat a claim may be broader than the specific embodiment disclosed in a specification is in itself of no moment.”<sup>473</sup> This is in conformance with the holding of the Court in *In re Smythe*, that “[w]e cannot agree with the broad proposition ... that in every case where the description of the invention in the specification is narrower than that in the claim there has been a failure to fulfill the description requirement in section 112.”<sup>474</sup>

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<sup>473</sup> *Arnold C. Bilstad, et al., v. Wakalopulos, et al.*, 386 F.3d 1116 (Fed. Cir. 2004).

<sup>474</sup> *In re Smythe*, 480 F.2d 1376, 1382 (CCPA 1873).

Here, as in *Bilstad*, Appellant discloses a plurality of single assemblies that, unlike references of record such as Gokcebay '777 contains "a plurality of electromechanical locking members" as well as "at least one electromechanical locking member" as set forth in claims 90 and 120, respectively.

The Examiner further argues that,

"The specification discloses that the 'plurality' of locking members 106a, 107a, 108a are used alternatively and not as a plurality within the same plug." See the specification on page 12, lines 11 -13 which clearly recites the use of locking member 106a or 107a or 108a."

Appellant notes that the discussion on page 12, lines 11-13 is one small portion of the entirety of Appellant's specification, and that portion describes the interchangeability of these assemblies in different embodiments. Nothing in Appellant's page 12 negates the use of a plurality of any one of these embodiments or the use of two, or more, different ones of these embodiments.

The Examiner is referred to *Lampi Corp. v. American Power Products, Inc.*, 228 F3d 1365, 1377-78 (Fed. Cir. 2000) which affirmed a District Court's finding that disclosure of only identical half-shells were sufficient with description support for a claim in compassing both identical and non-identical half-shells. As a general rule, a disclosure of species provides



sufficient written description support for a later filed claim directed to a genus.

Here, the Examiner seeks to ignore this general rule and instead, substitute a rule that disclosure of “one” invokes a “one and only one” limitation. This substitution was refuted by the U.S. Court of Appeals for the Federal Circuit, which held, in the interpretation of claims, “the use of the singular form “a” in conjunction with “comprising” and without narrowing language typically encompasses **both** singular and plural embodiments.”<sup>475</sup>

Consequently, the basis for this rejection is unattainable, and may not be sustained. The Examiner is respectfully urged therefore, to withdraw this rejection in view of the overwhelming adequacy of Appellant’s disclosure of a multiplicity of embodiments which may be used either singularly, in various combinations of different species or in a plurality of like or different species. Such action is respectfully urged.

**A. Appellant’s Originally Filed Specification Provides Enablement For The Subject Matter Defined By Claims 90 And 120**

In support of the rejection, Paper No. 20080619 states that,

“Claims 90 and 120 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

The claim(s) contains [*sic*] subject matter *which was not described*

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<sup>475</sup> *Hyperphase Technologies, LLC v. Google, Inc.*, Case Nos 07-1125, -1176 (Fed.Cir. 26 December 2007) (Michel C. J.).

*in the specification* in such a way as to enable one skilled in the art ... to make and/or use the invention. Secondly, the specification discloses that the *plurality* of locking members 106a, 107a, 108a are used alternatively and not as a plurality within the same plug. See the specification on page 12, lines 11-13 which clearly recites the use of locking member 106a or 107a or 108a.”<sup>476</sup>

Under current Office practice,

“[t]o satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonable conclude that the inventor had possession of the claimed invention”.<sup>477</sup>

The typical issue “raised in the cases is most often phrased as whether the original application provides ‘adequate support’ for the claims at issue or whether the material added to the specification incorporates ‘new matter’ in violation of 35 U.S.C. §132.”<sup>478</sup> Here, no matter has been added to the specification; the issue before the Examining staff is thus, “whether the original application provides ‘adequate support’ for” claims 90 through 120?

The Examining staff premised this rejection of claims 90 through 120 on grounds that,

“the instant specification fails to provide support for the *at least one*

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<sup>476</sup> Paper No. 20080619, ¶3.

<sup>477</sup> *MPEP*, §2163, p. 2100-172 (Rev. 3, August 2005).

<sup>478</sup> *MPEP*, §2163, p. 2100-172 (Rev. 3, August 2005).

*electromechanical locking member and plurality of  
electromechanical locking members* set forth in claims 90 and 120,  
respectfully.”<sup>479</sup>

No other averment is made in support of this rejection. At issue therefore, is “whether the original application provides “adequate support” for the claims at issue”?

Appellant invites the attention of the Examining staff to Figures 2 through 7, and especially to the embodiment of Figure 3 which shows the distal portion 106a surrounding the distal portion 106B of detent 106A. In the language of the original specification, “[t]he open distal end of chamber 80 is intersected by a circumferential groove 101ℓ which may partially, or completely, encircle the exterior circumferential surface of plug 101”,<sup>480</sup> “[a]rmature 106a forms the radially outward distal end of solenoid coil 106b, and is radially outwardly biased by spring 106D so as to extend radially upwardly into the path of groove 101ℓ and thereby engage detent 106A”,<sup>481</sup> and “cavity 106c will surround detent 106A.”<sup>482</sup> The attention of the Examining staff is further invited to page 14 of the originally filed specification, where Appellant teaches that,

“when an unidirectional electrical current is applied through the  
particular winding 106b, 107b, 108b, the corresponding shaft 106d,

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<sup>479</sup> Paper No. 20080619, ¶4, page 3.

<sup>480</sup> Original specification, page 12, lines 15 and 16.

<sup>481</sup> Original specification, page 12, lines 18 through 20.

<sup>482</sup> Original specification, page 14, line 15.

107d, 108d will either axially reciprocate (*i.e.*, radially through its corresponding chamber 82) along axis A or incrementally rotate (*e.g.*, by ninety degrees within its corresponding chamber 82) around axis A and thereby alter the positional relation between blocking detent 106A or 107A relative to the corresponding blocking armature 106a, 107a or 108a”.<sup>483</sup>

Turning to page 25, Appellant further teaches that,

“The plug is configured with the electrical operator maintaining the distal member within the plug with the distal member extended not beyond the exterior surface while the distal member is in the first position, and maintaining the distal member in engagement with the cylinder while the distal member is in the second position”.<sup>484</sup>

In short, one distal end (of chamber 80)<sup>485</sup> does in fact ***surround*** another distal end (of armature 106a)<sup>486</sup>, and, depending upon the “orientation relative to said exterior surface obstructing said relative movement when said distal member at least partially surrounds said distal member.”<sup>487</sup>

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<sup>483</sup> Original specification, page 14, lines 5-10.

<sup>484</sup> Original specification, page 25, lines 7-10.

<sup>485</sup> Original specification, page 12, line 15.

<sup>486</sup> Original specification, page 12, line 18.

<sup>487</sup> Claim 11, penultimate and last lines. With the elected species before the Examining staff, Appellant’s “obstructing said relative movement” may be achieved by causing the “different orientation” which may be either radial or rotational, depending upon both the design of the distal portion of the armature 106a, 107a, 108a, etc. and whether the

Alternatively, and referring again to the foregoing excerpts from Appellant's originally filed specification in conjunction with Figure 3, the distal end of armature 106a and its exposed recess 106c will surround the distal end of detent 106A and, depending upon the "orientation relative to said exterior surface obstructing said relative movement when said distal member at least partially surrounds said distal member."<sup>488</sup> Although the language of claim 11 may be open to an alternate wording, that is not at issue here. In point of fact, the foregoing excerpts demonstrate that Appellant does satisfy both the written description and enablement prongs of the first paragraph of 35 U.S.C. §112 by describing how to make and use a "distal member" of Appellant's "electrical operator", as illustrated in at least three embodiments on 106(a), 107(a) and 108(a) in Figure 1, makes this rejection improper under both the "written description" and "enablement" requirements of the first paragraph. Appellant notes however, that there is no rejection under the second paragraph of §112 of claim 11 in the record before the Examining staff. Furthermore, the rejection is based upon a conclusory statement by the Examining staff; there is no evidence of record of an absence of either (i) a lack of enablement the subject matter of claim 11, of (ii) an absence of a written description the subject matter of claim 11, or (iii) a failure to disclose the best mode for practicing the subject matter of claim 11.<sup>489</sup> Consequently, in view of the satisfaction of the requirement for enablement of the phrases "distal member", this rejection may

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winding of the coil is that of a solenoid, a rotary motor, or alternatively, a stepping motor, or alternatively, a combination of a radial and rotational change.

<sup>488</sup> Claim 11, penultimate and last lines.

<sup>489</sup> *High Concrete Structures, Inc. v. New Enter. Stone And Lime Co.*, 377 F.3d 1379, 71 USPQ2d 1948. 1951, WL 1689152 (Fed. Cir. 29<sup>th</sup> July 2004).

not be sustained under the first paragraph of §112.<sup>490</sup>

**B. Appellant's Originally Filed Specification Provides Both A Written Description And Enablement For The Subject Matter Defined By Claims 90 And 120**

**First**, Appellant notes that Paper No. 20080619 contains various assertions that infer that the use of the phrase *at least one*<sup>491</sup> in the Field, *et al.* '307 patent means *a plurality or more than one*. The Examiner has cited no authority under the statute to make this inference. Paper No. 20080619 has failed to demonstrate that the phrase *at least one*<sup>492</sup> as used in the Field, *et al.* '307 patent defines any number other than *one*. Attention of is invited to the complete absence of authority for the Examiner's proposition that the phrase *at least one* means any number other than *one*. Appellant's Figure 1, which displays an array of at least three electromechanical locking members 106a, 107a and 108a, all of which satisfy the definition of a locking member given by Field, *et al.* '307 in column 5, lines 1 through 8, and all or any one of which might be borne by Appellant's array of apertures 80, 82.

**Second**, Paper No. 20080619 also states that,

“the instant specification fails to provide support for the “at least

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<sup>490</sup> Where the meaning of a claim is “reasonably discernable,” the claim is not indefinite. *Bancorp Servs., LLC v Hartford Life Ins. Co.*, 359 F.3d 1367, 69 USPQ2d. 1996 (Fed. Cir. 1<sup>st</sup> March 2004).

<sup>491</sup> Claim 1 of Field, *et al.* '307 reads, in part, “wherein *at least one* electromechanical locking member is disposed within the barrel ... .” Column 9, lines 5 and 6.

<sup>492</sup> Claim 1 of Field, *et al.* '307, column 9, lines 5 and 6.

one electromechanical locking member”<sup>493</sup>

Attention is invited to the illustrations in Figures, and especially Figure 1, where three distinct electromechanical locking members 106a, 107a and 108a are individually identified and described, and are collectively illustrated as an array. The structure and operation of each of these locking mechanisms are described in the originally filed specification. The attention of the Examining staff is invited to also note Appellant’s express teachings in, among other features, that Integration of an electrical operator with a locking mechanism may be achieved by incorporation of one, or more, of electrical operators 105, 106, 107, 108<sup>494</sup> such as, to use the simplest of examples, the insertion of electrical operators 105b, 106b, 107b, 108b for pin tumblers 101b, or other types of tumblers,<sup>495</sup> into pin cylinders 80, 82<sup>496</sup>. Re-boring of one, or more, of pin cylinders 80, 82 may be necessary when retrofitting an existing lock; this will not require removal or other alteration of cylinder shell 102.<sup>497</sup> In short, Figure 1 illustrates a plurality of apertures (*e.g.*, pin

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<sup>493</sup> Paper No. 53, page 2, paragraph 3.

<sup>494</sup> Page 22, beginning with line 18.

<sup>495</sup> With a concomitant re-bitting of the corresponding key to omit from the blade of the key any (or each) “tooth corresponding to the cylinder occupied by solenoid 105b”. See, page 20, line 21 and page 21, lines 1 and 2.

<sup>496</sup> Page 21, lines 8 through 11 and page 22, beginning with line 18., as illustrated by Figures 1 and 8A.

<sup>497</sup> Page 21, lines 8-11 expressly teach that “In a particular practice, the diameter of one of pin cylinders 80, 82 may not be sufficiently wide to accommodate a particular solenoid and will require re-boring of the cylinder. The rebored plug can still be retrofitted into an already installed cylinder however, without the necessity of removing cylinder 102.”

cylinders 80, 82) and a plurality of solenoids 106b, 107b and 108b, together with a plurality of tumbler pins 101b. Alternatively, claims 90 and 120 may be practiced with but a single solenoid 106b, 107b or 108b. In short, there is no basis on the record before the Office to support the assertion of the Examining staff that “the instant specification fails to provide support for the ‘at least one electromechanical locking member’”;<sup>498</sup> moreover, the Examining staff has submitted to the prosecution history an administrative record that is singularly devoid of either citation supporting this assertion or other rationale justifying the assertion. This rejection may not therefore be sustained.

In view of these teachings, there is no evidence of record to establish a lack of an absence of either (i) a lack of enablement the subject matter of claims 90 or 120, of (ii) an absence of a written description the subject matter of claims 90 or 120, or (iii) a failure to disclose the best mode for practicing the subject matter of claims 90 or 120.<sup>499</sup> Consequently, in view of the satisfaction of the requirement for enablement of the phrase “distal member”, this rejection may not be sustained under the first paragraph of §112.<sup>500</sup>

**Third**, the attention of the Examining staff is invited to the description of the *electromechanical locking member* given by Field, *et al.* ‘307:

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<sup>498</sup> Paper No. 53, page 2, paragraph 3.

<sup>499</sup> *High Concrete Structures, Inc. v. New Enter. Stone And Lime Co.*, — F.3d ----, WL 1689152 (Fed. Cir. 29<sup>th</sup> July 2004).

<sup>500</sup> Where the meaning of a claim is “reasonably discernable,” the claim is not indefinite. *Bancorp Servs., LLC v Hartford Life Ins. Co.*, 359 F.3d 1367, — USPQ2d. \_\_\_\_ (Fed. Cir. 1<sup>st</sup> March 2004).



“[a] plurality of electromechanical locking members 50, 52, 54 preferably are located within the central recess portion 42. The locking members are referred to as electroomechanical because, as described below, there are moved under the force of an electronically powered drive mechanism.”<sup>501</sup>

Wholly absent from Field, *et al.* ‘307 is any attribution of any electromechanical characteristic or property to elements 50, 52, 54; Field, *et al.* ‘307 describes elements 50, 52, 54 as passive, rather than active, components. In contradistinction, Appellant’s locking pin 201a is disclosed as a mechanical component made of a ferromagnetic material such as iron, that is moved under the force created by an electronically powered drive mechanism, namely coil 201b. Alternatively, Appellant’s “armature 106a”<sup>502</sup> contains at least one of the “grooves or slots 51, 53, 55” attributed by Field, *et al.* ‘307 to his “locking members 50, 52, 54.”<sup>503</sup> Wholly absent from Paper No. 52 is any explanation of why slots 51, 53, 55 in Field, *et al.* ‘307 provide enablement under the first paragraph of 35 U.S.C. §112 with each of elements 50, 52, 54 teaching “at least one electromechanical locking member”, while slots 107c, 108h and grooves 105n of Appellant’s electromechanical components 105D, 106a, 107a and 108a do not similarly provide enablement under the first paragraph of 35 U.S.C. §112 Appellant’s electromechanical components into “electromechanical locking members”, when Appellant’s electromechanical components 105D,

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<sup>501</sup> Field, *et al.* ‘307, col. 5, lines 65 through 67, and col. 6, lines 1 and 2.

<sup>502</sup> Shown in Figures 2 and 3.

<sup>503</sup> Field, *et al.* ‘307, col. 5, lines 5 and 6.

106a, 107a and 108a are disclosed as responding to an electrically driven motor or solenoid by exhibiting movement relative to a detent, or to a sidebar, or other obstruction?

Absent any basis for the Examiner's inference<sup>504</sup>, Paper No. 52 fails to satisfy the standard required under 37 CFR §1.104, and is incomplete to the extent that Appellant can not reasonably and accurately comply with the requirement for a Request under 37 CFR §1.607. Accordingly, and in view of the absence of any evidence of record establishing an absence of enablement, this rejection should not be maintained absent completion of an administrative record in compliance with 37 CFR §1.104(a) and (b) which supports this rejection; Appellant has previously requested clarification, via a supplemental to Paper No. 20080619, containing:

- An explanation of the meaning of the phrase *at least one*, as used in Paper No. 20080619.
- Identification of authority that establishes that the phrase *at least one* indicates a number greater than one under the second paragraph of 35 U.S.C. §112.
- Identification of authority that supports the Examiner's explanation in the supplemental Paper No. 20080619 of the meaning of the phrase *at least one* stated by the Examiner.
- A written explanation of the difference between an "electromechanical locking

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<sup>504</sup> See, for example, Paper No. 53, paragraph 3.

member” and Appellant’s “armatures” and “locking pins”, as those terms pertain to this application.

- A written identification of the column and line number of Field, *et al.* ‘307 giving an explanation of any *electromechanical* property and characteristic of elements 50, 52 and 54 that defines a difference between an “electrical element”, as those terms pertain to this application.
- A written explanation by the Examiner of why slots 51, 53, 55 in Field, *et al.* ‘307 convert each of elements 50, 52, 54 into “at least one electromechanical locking member”, while slots 107c, 108h and grooves 105n of Appellant’s electromechanical components 105D, 106a, 107a and 108a do not similarly convert Appellant’s electromechanical components into “electromechanical locking members”, when Appellant’s electromechanical components 105D, 106a, 107a and 108a are disclosed as responding to an electrically driven motor or solenoid by exhibiting movement relative to a detent, or to a sidebar, or other obstruction?

These requested items of clarification have not been forthcoming; consequently, absent the requested clarification to the contrary, the record before the Examining staff conclusively establishes that more than one art-recognized noun may be used to describe features and components disclosed in Appellant’s application. In view of the foregoing explanation and demonstration of enablement under the first paragraph of 35 U.S.C. §112, these rejections should

not be sustained. Such action is respectfully requested.

**C. The rationale given in Paper No. 20080619 inaccurately interprets that explicit language of Appellant's specification**

In the rationale given by Paper No. 20080619 in support of this rejection, the Examiner writes that,

“Secondly, the specification discloses that the *plurality* of locking members 106a, 107a, 108a are used alternatively and not as a plurality within the same plug. See the specification on page 12, lines 11-13 which clearly recites the use of locking member 106a or 107a or 108a.”<sup>505</sup>

The passage of Appellant's specification is a part of the *Detailed Description* that discusses the details of Appellant's release mechanism which may be incorporated into Appellant's “electromechanical locks”<sup>506</sup> and “the plugs and cylinders of electromechanical locks,”<sup>507</sup> and references those mechanisms to corresponding drawings. Where the Examiner's rationale has erred is endeavoring to interpret the adjective *plurality* by reference to a re-phrasing of a single sentence taken, in isolation, from the entirety from the twenty-eight pages of Appellant's original specification; this resulted in the erroneous interpretation now found in Paper No. 20080619.

In its entirety, the passage cited by the Examiner reads,

A release assembly such as a reciprocating solenoid coil 106b driving blocking armature 106a shown in greater detail in Figures

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<sup>505</sup> Paper No. 20080619, ¶3.

<sup>506</sup> Original specification, page 1, line 11.

<sup>507</sup> Original specification, page 1, line 11.

2 and 3, or a rotary motor 108b driving blocking armature, 108a shown in greater detail in Figures 4 and 5A and 5F, or the reciprocating solenoid coil 107b of blocking armature 107a shown in greater detail in Figures 6 and 7, resides within (typically cylindrical) chamber 80.”<sup>508</sup>

The structure of this passage is written in the disjunctive in order to teach the differences of structure between these constituent components. Moreover, a subsequent sentence within the same paragraph writes about Appellant’s release assemblies 106, 107, and 108 in the conjunctive, in the aggregate, by stating that:

“Release assemblies 106, 107, and 108 are electrically connected to an electronic logic and control circuit 104b encapsulated within an electrically insulated casing 104 formed to define an outer sector of cylindrical plug 101.”<sup>509</sup>

Still other passages describe these constituent components either disjunctively, or conjunctively; these teachings by Appellant’s original specification is an affirmative rebuttal of the Examiner’s assertion that one passage of Appellant’s specification constitutes a disclaimer of the subject matter of the alternative of the issue of enablement, and the scope of rejected claims 90 and 120.

The fatal flaw in the Examiner’s rationale is that the Examiner is making an untimely argument that Appellant is precluded from recapturing “specific meanings disclaimed during prosecution”<sup>510</sup>, despite the fact that prosecution of the above-captioned application has yet to

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<sup>508</sup> Original specification, page 12, lines 11-15.

<sup>509</sup> Original specification, page 12, lines 120 and 21, and page 13, line 1.

<sup>510</sup> *Mangosoft, Inc., et al. v. Oracle Corporation*, slip opinion, p. 11.

conclude.<sup>511</sup> Moreover, in a decision that dwelled upon the correct methodology for judicial interpretation of the language of patent claims, *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki*, 520 U.S. 111 (1979), the claims defined *sealing rings* in the plural, but the accused device had but a single sealing ring. Subsequently, in *Dayco Products, Inc. v. Total Containment, Inc.*, the Federal Circuit recognized that, in context, the plural can describe a universe ranging from one to some higher number, rather than requiring more than one item.<sup>512</sup> This holding about the enablement of the plural by a disclosure of a single species was again repeated by the Federal Circuit in its decision in *Versa Corporation v. AG-Bag International Limited*.<sup>513</sup> \_\_\_\_ F.3d \_\_\_\_ (Fed. Cir. 2004).

In summary, Appellant has demonstrated an affirmative enablement of a plurality of constituent components of Appellant's locking mechanism, the absence of any disclaimer of any disclaimer or estoppel of Appellant's right to for pending claims 90 and 120 to cover an embodiment which may cover a plurality of those constituent components, and enablement of one of ordinary skill in the art to both make and to use an embodiment which may cover a plurality

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<sup>511</sup> The issue argued by Paper No. 20080619 is whether Appellant has made a disclaimer or estoppel of Appellant's right to for pending claims 90 and 120 to cover an embodiment which may cover a plurality of those constituent components. This is not an issue to be addressed at this stage of the examination under the first paragraph of 35 U.S.C. §112; rather Paper No. 20080619 should instead focus upon whether Appellant's original specification provides enablement of one of ordinary skill in the art to both make and to use an embodiment which may cover a plurality of those constituent components?

<sup>512</sup> *Dayco Products, Inc. v. Total Containment, Inc.*, 258 F.3d 1317, 1328 (Fed. Cir. 2001).

<sup>513</sup> *Versa Corporation v. AG-Bag International Limited*. \_\_\_\_ F.3d \_\_\_\_ (Fed. Cir. 2004).

of those constituent components. The attention of the Board is invited to note that the final Office action makes not allegation of a deficiency in the requirement of §112 for a written disclosure, and instead avers the presence of “subject matter [in the claims] which was not described in the specification in such a way as to enable ... to make and/or use the invention.” Appellant respectfully submits that in view of Appellant’s disclosure and illustration of multiple embodiments of “electromechanical locking members”, the absence of a disavowal of the construction or use of more than one of these “electromechanical locking members”, and the guidance provided by the Federal Circuit in application of the first paragraph of §112, in *Epistar Corporation*<sup>514</sup> and in *KCJ Corp.*,<sup>515</sup> Paper No. 20080619 fails to make a *prima facie* showing of a lack of enablement by Appellant’s original specification of an embodiment which may cover a plurality of *locking mechanisms*. This rejection should not, therefore, be sustained. Such action is respectfully urged.

### Double Patenting

**Claims 1-5, 11-13, 34, 65-69, 75, 92-100, 112, 121 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-78 of U.S. Patent No. 6,564,601 to Hyatt Jr.**

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<sup>514</sup> *Epistar Corporation v. International Trade Commission, et al.*, \_\_\_ F.3d \_\_\_, \_\_\_ USPQ 2d. \_\_\_ (Fed. Cir. 22 May 2009);

<sup>515</sup> *KCJ Corp. v. Kinetic Concepts, Inc.* 223 F.3d 1351, 1356 (Fed Cir. 2000), and *AbTox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023 (Fed. Cir. 1997).

The Examining staff has not given careful consideration to the guidance tendered by the U.S. Court of Appeals for the Federal Circuit which recently confirmed its earlier holdings that,

“If the [patent subject to the double-patenting challenge] and the [patent that is the basis of the challenge] trace their lineage back to a common patent which was subject to a restriction requirement, then §121 intervenes to prevent [an obviousness-type] double patenting rejection.) We have also held that §121 applies specifically to continuing applications deriving from a divisional application filed as a result of a restriction requirement. *See, e.g., Symbol Techs., Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1580 (Fed. Cir. 1991); *Amgen Inc. v. F. Hoffman-La Roche Ltd*, 580 F.3d 1340, 1354 (Fed. Cir. 2009) (“Intervening continuation applications do not render a patent ineligible for §121 protection so long as they descended from a divisional application filed as a result of a restriction requirement.”) We see no reason why §121 would not likewise extend to a divisional of a divisional.”<sup>516</sup>

Consequently, under §121, as is explained by *Boehringer*, the claims of Appellant’s divisional Hyatt ‘601 patent can not belatedly be cited to support an obviousness-type double-patenting rejection of the original claims of this parent application that are now before the Board.

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<sup>516</sup> *Boehringer Ingelheim International GmbH, et al. v. Barr Laboratories, Inc., et al.*, \_\_\_ F.3d \_\_\_ (Fed. Cir. 2010)



Turning now to the claims themselves, the Examiner states that the present application and Appellant's divisional Hyatt '601 are not patentably distinct from each other because they merely recite like elements using different terminology and/or phraseology such as "detent" instead of "bar", and that claims 1 and 11 recite a "detent" but not a "stationary detent" and thus, the side bar detent of the patent reads on this limitation. Appellant respectfully traverses this rejection for the following reasons:

In support of this rejection the Examiner argues that,

"It is noted that claims 1 and 11 recite a 'detent', but not a 'stationary detent', and thus, the side bar detent of the patent reads on this limitation."

Appellant disagrees with the Examiner's conclusion of law, and observes that the presence of different nouns in a claim indicates that each noun refers to a different constituent component of that claim. Moreover, where, as here, there is a finding of law that the parent application claimed "two or more independent and distinct inventions," it would be unusual not to have similar terms used throughout the specification and claims. The Examiner has neither made findings of fact that in any of these rejected claims the different words refer to the same constituent elements within that claim, or that any claim of Appellant's '601 patent and any claim of Appellant's the above-captioned application do not stand in a relationship of "two or more independent and distinct inventions" which were "claimed in one application" and that one of those "independent and distinct inventions" was "made the subject of a divisional application that complies with the requirements of" 35 U.S.C. §120. Consequently, there is no basis either under 35 U.S.C. §121,

or outside of the law as stated by 35 U.S.C. §121, for sustaining this “provisional” rejection under the doctrine of non-statutory obviousness double patenting.

In ignoring *arguendo* the absolute prohibition imposed by 35 U.S.C. §121, the Examiner appears to have confused the language of pending claims 1 and 11.

### Claim 1

No claim in Appellant’s U.S. Patent No. 6,564,601 defines Appellant’s combination incorporating **both** “a sidebar” and “an electrical operator disposed within one of said apertures ... engaging a **detent** protruding from the cylinder ... .” Moreover, and as discussed in greater detailed below in the address of obviousness rejection, neither Gokcebay ‘777, Thordmark ‘274 nor Naveda ‘127, nor any combination of these three references, discloses **both** Appellant’s “sidebar” and Appellant’s “electrical operator disposed within one of said apertures ... engaging a **detent** protruding from the cylinder” and “obstructing said relative movement” of the plug. There is therefore, no basis for asserting either double patenting or obviousness-type double patenting.

### Claim 11

No claim in Appellant’s ‘601 patent defines Appellant’s combination incorporating **both** “a **sidebar**” and Appellant’s “shell bearing a **detent** extending into said shell” in combination with Appellant’s “electrical operator having a distal member moving relative to said detent ... obstructing said relative movement when said distal member at least partially surrounds said detent.” Furthermore, neither Gokcebay ‘777, Thordmark ‘274 nor Naveda ‘127, nor any

combination of these three references, teaches or discloses Appellant's combination defined in claim 11 of "said shell bearing a detent extending into said shell" and "electrical operator having a distal member ... obstructing said relative movement when said distal member at least partially surrounds said detent."

Consequently, there is no evidence of record in this administrative proceeding which would support a double patenting rejection.

Additionally, the absolute prohibition of 35 U.S.C. §121 which is discussed further below, is an absolute bar to this double patenting rejection. Its withdrawal is respectfully urged.

- 3. Claims 1 through 5, 11 through 13, 34, 65 through 69, 75, 92 through 100, 112 and 121 have been improperly rejected under the judicially created doctrine of obviousness-type double patenting based upon Appellant's divisional U.S. Patent No. 6,564,601.**

Claims 1 through 5, 11 through 13, 34, 65 through 69, 75, 92 through 100, 112 and 121 were rejected under the doctrine of obviousness type double patenting. This rejection is improper, and may not be sustained, particularly here, where several claims in the above-captioned application remain finally withdrawn from consideration under 35 U.S.C. §121 and 37 CFR 1.142(b).

Although this rejection purports to be based upon the judicial doctrine of obviousness-type double patenting, by maintaining this rejection, the Examining staff has ignored not only the express statutory prohibition of 35 U.S.C. §121 against this rejection, but all of the judicial

interpretations of that statutory prohibition; no Court has modified the judicially created doctrine of obviousness type double patenting by holding that the Examining staff is authorized to ignore 35 U.S.C. §121. By way of example, in *Geneva Pharmaceuticals., Inc. v. Glaxo SmithKline PLC*,<sup>517</sup> the Court announced a two part test governing when 35 U.S.C. §121 bars an obviousness-type double patenting rejection. First, each claim of Appellant '601 patent appeared in the instant application. Second, the Examiner actually imposed, maintained, and continues to maintain a requirement under 37 CFR §1.146 for an election of species, arguing that no generic claims were allowable. Subsequently, Appellant's divisional application was filed to present claims which were indicated by the Examiner to be allowable in the above-captioned application, and those claims were passed to issue in Appellant's '601 patent.

Where, as here, the '601 patent is in conformance with 35 U.S.C. §121, and "was an application filed as a result of such a requirement ...", the resulting '601 patent "***shall not*** be used as a reference ... in the Patent and Trademark Office ... against ... the original application."<sup>518</sup> The Examiner's requirement for restriction has never been withdrawn.<sup>519</sup> Accordingly, 35 U.S.C. §121 bars this rejection and the Board is respectfully requested to refuse to sustain this rejection

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<sup>517</sup> *Geneva Pharmaceuticals., Inc. v. Glaxo SmithKline PLC*, 349 F.3d 1373, 68 USPQ2d 1865 (Fed.Cir. 21<sup>st</sup> November 2003)

<sup>518</sup> 35 U.S.C. §121.

<sup>519</sup> In *Geneva Pharmaceuticals., Inc.*, no requirement for restriction had ever been imposed. In the above-captioned application however, evidence of the actual and continued imposition of a requirement for restriction by the Examining staff in the instant application, Paper No. 08042005 dated on the 5<sup>th</sup> of August 2005, states that "claims 43-45, 73, 94 [*sic*] are withdrawn from consideration."

of claims 1 through 5, 11 through 13, 34, 65 through 69, 75, 92 through 100, 112 and 121 under the doctrine of obviousness-type double patenting.

**Claims 1 Through 5**

In support of the rejection, the Examiner asserts that,

“the conflicting claims are not identical, they are not patentably distinct from each other because they merely recite like elements using different terminology and/or phraseology such as ‘detent’ instead of ‘bar’. It is noted that claims 1 and 11 recite a ‘detent’, but not a ‘stationary detent’, and thus side bar detent of the patent reads on this limitation.”

The Examiner has misinterpreted the basis for the Election of Species detailed in Paper No. 37, set forth in the corrected Decision on Petition. Independent claim 1, by way of example, defines “an electrical operator ... obstructing said relative movement *by engaging a detent protruding from the cylinder.*” Appellant notes that claim 1 already defines a “side bar”, and separately defines an “electrical operator” as engaging a “detent protruding from the cylinder.” This feature and cooperation between constituent components is not present in the claims of Appellant’s later filed U.S. 6,564,601. The attention of the Examiner is directed to the embodiments of the species including Figure 1, where detents 106A, 107A are borne by cylinder 102, rather than by plug 101. None of claims 1 through 78 set forth in the Appellant’s later filed U.S. 6,564,601 define these features. The fact that one divisional patent is directed to a patentably distinct and independent species does not forestall the right of the Appellant under 35 U.S.C. §121 to claim one, or more,

genius. Consequently, the Examiner's assertion that the claims differ from those claims in Appellant '601 patent solely in terminology or phraseology is misplaced. These features are wholly absent from the claims set forth in Appellant's '601 patent. Accordingly, and recognizing the inadequacy of the administrative record before the Examiner and the inability of Paper No. 20080619 to identify the features in any of the issued claims, this rejection may not be sustained.

**Claims 11 Through 13**

Independent claim 11 defines, *inter alia*, "an electrical operator ... obstructing said relative movement when said distal member at least partially surrounds ... ." This feature defines the electrical operator with features such as those illustrated in Figure 1 by 106a, 107a and 108a. In contradistinction, the claims of Appellant's '601 patent nowhere define these features and functional operations. The complete absence of any allegation in Paper No. 20080619 that any particular claims in '601 contain such features, is convincing evidence of absence of obviousness-type double patenting. The Board is respectfully requested to refuse to sustain this rejection.

**Claims 12 And 13**

Dependent claims 12 and 13 define a structure in terms of the electrical coil and the structure of the distal member of the electrical operator. These features are not found in any claim of Appellant's '601 patent. This is consistent with those of the elected species, such as are illustrated by Figures 5A and 5B. Moreover, Paper No. 20081216 makes no suggestion that claims 12 and 13 are rendered unpatentable under the doctrine of obviousness-type double patenting over any claim of Appellant's '601 patent. 35 U.S.C. §121 prohibits this belated determination of an obviousness-type double patenting rejection between an unidentified claim

in Appellant's '601 patent and pending claims 12 and 13; the Board is respectfully urged to refuse to sustain this rejection of claims 12 and 13.

#### **Claim 34**

Appellant notes that claim 34 defines a "side bar", and separately defines an "electrical operator" as engaging a "detent protruding from the cylinder." This feature and cooperation between constituent components is not present in the claims of Appellant's later filed U.S. 6,564,601. Moreover, Appellant's own work represented by his '601 patent can not serve as a basis for establishing obviousness; there is therefore, no evidence of record before the Examiner showing obviousness between any of the claims of Appellants' '601 patent and claim 34. The Board is respectfully requested to refuse to sustain this rejection.

#### **Claims 65 Through 69**

Claim 65, as well as dependent claims 66 through 69, among other distinctions, define "an electrical operator comprising an armature, said armature ... *rotating around said longitudinal axis* with said plug ... ." This, among other features, is not present in the independent claims of Appellants' '601 patent. Moreover, this is consistent with the elected species, such as those illustrated by Figures 5A and 5B. Appellant's own work represented by his '601 patent can not serve as a basis for establishing obviousness; there is therefore, no evidence of record before the Examiner showing obviousness of claims 65 through 69 over any of the claims of Appellants' '601 patent. The Board is respectfully requested to refuse to sustain this rejection.

#### **Claims 66 Through 69**

Dependent claims 66 through 69 defines locks in terms of alternative structures of the

electrical operator, a coil and the driving of an armature. These features are not found in any claim of Appellant's '601 patent. This is consistent with the elected species, such as those illustrated by Figures 5A and 5B. Moreover, Paper No. 20081216 makes no suggestion that claims 66 through 69 are rendered unpatentable under the doctrine of obviousness-type double patenting over any claim of Appellant's '601 patent. 35 U.S.C. §121 prohibits this belated determination of an obviousness-type double patenting rejection between an unidentified claim in Appellant's '601 patent and pending claims 66 through 69; the Board is respectfully urged to refuse to sustain this rejection of claims 66 through 69.

**Claim 75**

Claim 75, among other distinctions, defines "an electrical operator ... electrically operable to respond to said control signal by moving along a radial axis that is traverse to said radial plane ... ." This feature of the elected species, is not present any of the independent claims of Appellant's own work represented by his '601 patent, and Appellant's own work may not serve as a basis for establishing obviousness; there is no evidence of record before the Examiner showing obviousness of claim 75 over any of the claims of Appellants' '601 patent. The Board is respectfully requested to refuse to sustain this rejection.

**Claims 92 Through 100**

Claim 92, upon which claims 93 through 100 depend, is closest in text and language to claim 62 of Appellant's '601 patent. Unlike claim 62, rejected claim 92 defines a "bar interposed between said shell and said cylinder plug, while patent claim 62 defines a "detent." Moreover, claim 92 had been pending for about twenty-one months in the above-captioned application when



claim 62 and Appellant's '601 patent was filed on the 4<sup>th</sup> of February 2002. Given the circumstances under which claim 62 was filed after a finding-of-fact by the Office that multiple independent and distinct species were claimed, imposition of a requirement for an election of species under 37 CFR §1.146, that pending claim 92 was directed to one species and after the filing of the divisional '601 patent with claim 62 directed to a different species, and the subsequent allowance of patent claim 62 defining one species constructed with a "detent" and the pendency of claim 93 constructed with a "bar," 35 U.S.C. §121 prohibits this belated determination of an obviousness-type double patenting rejection between patent claim 62 encompassing the species of Figure 8H, and pending claim 92 encompassing the species of Figures 5A and 5B, and 8H, and the Board is respectfully urged to refuse to sustain this rejection of claims 92 through 100.

#### **Claims 93 Through 99**

Dependent claims 92 through 99 encompass alternative embodiments of the elected species defined in terms of coils and corresponding armatures; none of these features are found in Appellant's '601 patent. Paper No. 20081216 makes no suggestion that claims 93 through 99 are rendered unpatentable under the doctrine of obviousness-type double patenting over any claim of Appellant's '601 patent. 35 U.S.C. §121 prohibits this belated determination of an obviousness-type double patenting rejection between an unidentified claim in Appellant's '601 patent and pending claims 93 through 99, and the Board is respectfully urged to refuse to sustain this rejection of claims 92 through 99.

#### **Claim 121**

Independent claim 121 defines, among other features, “a bar interposed between said shell and a cylinder plug detent extending radially from a second recess within said shell ... .” These features are not found in any claim of Appellant’s ‘601 patent. Moreover, Paper No. 20081216 makes no suggestion that claim 121 is rendered unpatentable under the doctrine of obviousness-type double patenting over any claim of Appellant’s ‘601 patent. 35 U.S.C. §121 prohibits this belated determination of an obviousness-type double patenting rejection between an unidentified claim in Appellant’s ‘601 patent and pending claim 121; the Board is respectfully urged to refuse to sustain this rejection of claim 121.

#### **Claim Rejections - 35 U.S.C. §103**

4. **Claims 25, 26, 28, 30 through 33, 39 through 42, 46 through 52, 54, 56, 64, 70, 76, 77, 90, 91, 105, 108, 109, 111, 113 through 116, and 119 through 121 are patentably distinguishable and allowable under 35 U.S.C. §103(a) over a proposed combination of Gokcebay, U.S. Patent No. 5,552,777 in view of Thordmark *et al.*, U.S. Patent No. 5,542,274 and Naveda, U.S. Patent No. 4,416,127.**

This rejection of claims 25, 26, 28, 30 through 33, 39 through 42, 46 through 52, 54 through 56, 64, 70, 76, 77, 82-84, 90, 91, 105, 107, 108, 109, 111, 113 through 116, and 119 through 121 is untenable under 35 U.S.C. §103(a) when the Examiner’s proposed combination of Gokcebay, U.S. Patent No. 5,552,777 modified according to Thordmark *et al.*, U.S. Patent No. 5,542,274 and Naveda, U.S. Patent No. 4,416,127, is carefully considered. Accordingly, Appellant respectfully traverses this rejection for the following reasons:

Claims 25, 26, 28, 30 through 33, 39 through 42, 46 through 52, 54, 56, 64, 70, 76, 77, 90, 91, 105, 108, 109, 111, 113 through 116, 119, 120 were all rejected under 35 U.S.C. §103(a)

as rendered obvious, and unpatentable, by the Examiner's proposed combination of Gokcebay U.S. 5.552.777 modified according to Thordmark U.S. 5.542.274 and Naveda U.S. 4.416.127. This proposed combination is improbable, is unsupported by any evidence of motivation in the record before the Examiner, and fails to provide a *prima facie* showing of obviousness; the Examiner is respectfully urged to refuse to sustain this rejection for the following reasons.

**A. The Rejection Under 35 U.S.C. §103 Errs By Considering The Individual Component References Of The Proposed Combination Piecemeal, And Thus Failing To Consider The Proposed Combination As A Single Entity**

In assembling the three exemplars of the art drawn to form the Examiner's proposed combination, Paper No. 20080621 makes a piecemeal consideration each reference, and merely identifies individual teachings about those references, thus failing to consider the proposed combination. By way of example of the flaw in this failure, Paper No. 20080619 erroneously reasons that,

“Naveda reinforces that one having ordinary skill in the art ... would have known of the versatility and interchangeability of known elements usable in verifying and actuating electric lock cylinders including among others, miniature coils, miniature electromagnets, electronic memories [*sic* ,] bioelectric circuits, resistance plates and the like (col. 3, line 1-13 and col. 4, lines 30-35).”

Based upon this casuistry, Paper No. 20080619 erroneously concludes that therefore,

“It would have been obvious to one of ordinary skill in the art to replace the simple blocking element of Gokcebay with the multi-part electrically actuated blocking element of Thordmark *et al.* to thwart natural attempts to force system locks that are equipped with electronic blocking functions, of the kind meant by Thordmark (col. 1, lines 38-42), by making forcing of such locks more difficult. It would have further been an obvious reversal of parts and change of size to select miniature logic circuitry and a miniature solenoid and

locking member 11 such that the blocking mechanism fits within a conventional sized lock plug as taught by Gokcebay and Naveda.”

The fallacy of Paper No. 20080619’s casuistry lies in the observation that regardless of the use of the term “miniaturization” by the proposed combination, the source of this term, Naveda ‘127, teaches “a practical embodiment” that, as illustrated by Naveda ‘127’s Figure 10, three (3) parallel rotating shafts, as opposed to the single rotating cylinder plugs of Appellant’s , Gokceby U.S. 5.522.77 and Thordmark U.S. 5.542.274. Utterly unexplained in Paper No. 20080619 is precisely how a tripling of the number of parallel rotating components might be said to teach “miniaturization” in any sense of that word?

Moreover, in the Examiner’s proposed combination, nothing teaches either:

“an obvious reversal of parts and change of size”; or

“an obvious ... change of size; or

how “to select miniature logic circuitry and a miniature solenoid and locking member 11 such that the blocking mechanism fits within a conventional sized lock plug.”

Although these deficiencies in the Examiner’s proposed combination are merely exemplary of the inadequacy of the prior art to render Appellant’s claims obviousness, these deficiencies illustrating the glaring incompleteness of in the Examiner’s refusal to consider the “subject matter sought to be patented as a whole” and the “differences between the subject matter sought to be patented and the prior art” as is mandated by 35 U.S.C. §103(a).

Equally unclear is why the pending claims raise questions of “reversal or parts” or “change of size” or whether the practice of the pending claims would raise an issue of whether

embodiments of these claims would provide a “blocking mechanism fits within a conventional sized lock plug”? Appellant submits that the Examiner appears to have lost sight of the definitions of the pending claims as well as the explicit requirement of 35 U.S.C. §103(a).

Appellant further submits therefore, and ignoring *arguendo* the absence of any teaching for making the Examiner’s proposed combination except an impermissible hindsight reconstruction in the light provided by Appellant’s rejected claim, Appellant’s pending claims define a patentably distinguishable structure, and process, constructed of non-obvious constituent components. Where, for example, in the Examiner’s proposed combination, is Appellant’s “*locking mechanism disposed with said apertures ... obstruction said reciprocation [of said sidebar]*” in combination with Appellant’s “*electrical operator disposed within one of said apertures ... obstructing said relative movement [between the cylinder and said plug]*”, as defined by claim 1? These deficiencies in the art are glaring, and scream against the Examining staff’s inadequate compliance with 35 U.S.C. §103(a). Consequently, the explicit teachings of the Examiner’s proposed combination fail to provide the combination asserted by Paper No. 20080619.

**B. The Rejection Under 35 U.S.C. §103 Ignores The Explicit Requirements Of 35 U.S.C. §103(a) For A Showing Of Obviousness**

The Examiner should pause to consider that Appellant’s claim 1, by way of example, is not the type of claim found in *KSR Int’l Co. v. Teleflex Inc.*<sup>520</sup> were every element, that is, both the electrical switch and the brake petal assembly, were standard off-the-shelf items that had been

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*KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1739, 82 USPQ2d @1395 (2008).

previously used in the same industry, for the same purpose, for many years, to achieve the same result. In *KSR*, neither the claim when read in its entirety, nor the two paragraphs that defined the switch and assembly, did anything more. Consequently, and in conformance with the precedential principles laid down by *Hotchkiss v. Greenwood*,<sup>521</sup> affirmed its principle of the “functional approach” that “[t]he combination of familiar elements according to known method is likely to be obvious when it does no more than yield predictable results.”<sup>522</sup>

Here, and unlike *KSR*, the Examining staff has failed to show that not even one of the constituent elements of Appellant’s claim 10 has ever been known in the art, and has failed to show either the structure (namely, Appellant’s Where, for example, in the Examiner’s proposed combination, are (i) Appellant’s “*locking mechanism disposed with said apertures ... obstructing said reciprocation [of said sidebar]*” in combination with Appellant’s “*electrical operator disposed within one of said apertures ... obstructing said relative movement [between the cylinder and said plug]*” where those *apertures* are defined as being formed in the cylinder plug, as defined by claim 1, and (ii) the concomitant operational functions defined by claim 10 (such as Appellant’s “locking mechanism disposed with said apertures **to move relative to said plug**” in combination with Appellant’s “*electrical operator disposed within one of said apertures ... having a distal member travelling in dependnece upon said control signals*”), or (iii) the results provided by these structures and their operational features (namely, Appellant’s “*obstructing said reciprocation [of said sidebar]*” and Appellant’s “*obstructing said relative movement [between*

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<sup>521</sup> *Hotchkiss v. Greenwood*, 11 Howard 248.

<sup>522</sup> *Ex parte Mary Smith*, Appeal No. 2007-1925 (BPAI 2007).

the cylinder and said plug]" defined by claim 10) attained by these operational functions performed by this structure of claim 1 have ever existed in the art outside of Appellant's specification. The Examiner is urged to consider that the procedural standard established by 35 U.S.C. §103(a) requires that "the *differences* between the subject matter sought to be patented and the prior art" must be identified; that standard has not been met here where the outstanding Office action as attributed to the Examiner's proposed combination the nomenclature, operational functions and results attained when these properties can not be found by a thorough reading of that proposed combination. To paraphrase the Board of Appeals, how may this art be said to teach these features of claim 1 when that art does not use the words of claim 1? These deficiencies in the art are the "differences" which must be identified under 35 U.S.C. §103(a). Absent any identification of these "differences" in the administrative record for this application, the procedural standard of 35 U.S.C. §103(a) has not been met. Consequently, there is no *prima facie* showing of obviousness on the administrative record before the Office. Withdrawal of this rejection is therefore respectfully urged.

**C. The Rejection Under 35 U.S.C. §103 Fails To Make A *Prima Facie* Showing Of Obviousness**

According to MPEP 706.02(j), the following establishes a *prima facie* case of obviousness under 35 U.S.C. §103:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference

(or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Appellant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

These standards imposed by MPEP §706.02(j) are not met, as is demonstrated by the following cursory review of the explicit language of the pending claims.

**Claim 25**

Nothing in the Examiner's proposed combination suggests Appellant's "stationary bar borne by said shell and interposed between said shell and said cylinder plug to create an obstruction to rotation" in combination with Appellant's "electrical operator borne by said cylinder plug ... maintaining obstruction of said relative movement by engaging said bar." In point of fact, the proposed combination in each of the references in the combination are devoid of any "stationary bar borne by said shell."

**Claim 46**

A thorough review of the Examiner's proposed combination demonstrates that that combination is devoid of Appellant's "bar borne by said plug ... to reciprocate generally along a radial plane" in combination with Appellant's "electrical operator ... moving within the second and different plane not coextensive with said radio plane ... to accommodate said movement of said bar ... ."

**Claim 56**

An exhaustive reading of the Examiner's proposed combination also demonstrates that the proposed combination lacks Appellant's "elongate member interposed ... to travel generally along



a radial direction” in combination with Appellant’s “electrical operator ... moving independently of said travel by said elongate member in a second direction within a plane that maintains said simultaneous engagement but is not aligned with said radial direction ... while said electrical operator is contained wholly within said plug ... .” In point of fact, the electrical operator of the primary reference must extend beyond the plug, and modification of the primary reference to contain the electrical operator “wholly within the said plug” is defined by claim 56 would impermissively prevent the primary reference from operating in its intended mode.

**Claim 64**

The Examiner’s proposed combination lacks Appellant’s “a sidebar interposed ... to travel generally along a radial plane ... while obstructing rotation” in combination with Appellant’s “an electrical operator borne by said cylinder plug ... moving in a different plane independently of said travel by said sidebar” and in combination with “said sidebar having a first portion that is positioned to be optionally blocked by another component of said lock functioning independently of said electrical operator.”

Additionally, consideration must be given to the fact that in each of the elements of the Examiner’s proposed combination, any “sidebar” that cooperates with an “electrical operator” is unable to be “optionally blocked by another component of said lock functioning independently of said electrical operator.” This feature is wholly absent from the Examiner’s proposed combination.

**Claim 70**

The Examiner’s proposed combination is devoid of Appellant’s “bar interposed ... to travel

generally along a radial plane ... while obstructing rotation” in combination with Appellant’s “electrical operator ... moving along a geometrical construct other than to said radial plane... .” In point of fact, the Examiner’s proposed combination consistently teaches structures with movement of both the electrical operator and any bar being wholly within a single plane of movement. Any deviation from that single plane of movement would impermissibly destroys the operability of the Examiner’s proposed combination.

**Claims 76 and 77**

The Examiner’s proposed combination lacks Appellant’s “elongate bar exhibiting a greatest longitudinal dimension along a second axis that extends transversely to said first base and to said second base ... to travel generally along a radial axis that is transverse to said second axis” in combination with Appellant’s “electrical operator ... moving along said radial axis.” In point of fact, the primary reference in the Examiner’s proposed combination necessarily travels along a radial axis that is coaxial with its greatest longitudinal dimension. Consequently, the definitions provided by claims 76 and 77 are not met.

Ignoring *arguendo* that the evidence of record demonstrates persuasively that the U.S. PTO has already found claim 90 to be patentably distinguishable over the art and has issued claim 90, nothing in the Examiner’s proposed combination teaches Appellant’s “electromechanical locking member disposed in the barrel ... positionable to permit the sidebar to engage the locking member in a non-barrel blocking position” and “an electronically powered drive mechanism cooperating with the electromechanical locking member to selectively move the locking member from the barrel blocking position to the non-barrel blocking position.” The complexity of this concept is

not found in the Examiner's proposed combination. Consequently, this rejection may not be maintained.

**Claim 91**

Examination of the Examiner's proposed combination is devoid of Appellant's combination of a "bar interposed between said shell and said cylinder plug to reciprocate generally along a radial plane", "locking mechanism ... hindering said reciprocation" and "electrical operator ... moving independently of said bar ... providing obstruction of said reciprocation by said bar ... ." In contradistinction, the Examiner's proposed combination critically relies upon an electrical operator that has no physical or cooperational relationship with the combination of a locking mechanism in a bar interposed between said shell and said cylinder plug, as taught by Appellant's claim 91.

**Claim 120**

The proposed combination is also devoid of Appellant's "elongated, generally cylindrically shaped barrel member having ... an interior containing a plurality of electromechanical locking members ... being movable to a position in which the grooves of the locking members are aligned" in combination with "an electronically powered drive mechanism located within the barrel member for moving the electromechanical locking members to a position in which the grooves of the locking members are aligned." Appellant notes that the Examiner has never addressed these features of claim 120, and the thorough reading of the Examiner's combination fails to reveal the structure defined by claim 120.

**Claim 121**

The proposed combination is also devoid of Appellant's "a bar interposed between said shell and a cylinder plug detent **extending radially from a second recess within said shell into a passage within said cylinder plug to create an obstruction to rotation**" in combination with Appellant's "electrical operator borne by said cylinder plug ... moving independently of said detent ... accommodating relative movement between said detent and said cylinder plug and ... maintaining obstruction of said relative movement by engaging said detent." In point of fact, not only is there no bar as defined by claim 121 in the Examiner's proposed combination, there is no electrical operator "engaging said detent" as defined by claim 121.

**Claims 46-52, 56, 64, 70, 76, 77, 90, 91, 105 and 119**

**First**, although the record before the Examiner has recognized that the combination including Gokcebay '777 fails to either teach or suggest:

"a bar/detent which moves radially to the axis of the plug and the electronic operator having an electronic locking member which moves independently of the movement of the bar/detent which is reciprocated between a blocking and releasing position as a result of independent movement of the locking member."

The record subsequently concludes however, that:

"[i]t would have been obvious ... to replace the simple blocking element of Gokcebay with the multipart electrically actuated blocking element of Thordmark et al to thwart natural attempts to force system locks ... [i]t would have further been an obvious reversal of parts and change of size to select miniature logic circuitry and a miniature solenoid and locking member 11 such that the blocking mechanism fits with a conventional sized lock plug as taught by Gokcebay and Naveda."

Entirely ignored by the Examiner's proposed combination is that Appellant's claims 46 through 52 define "a bar borne by said plug and rotatable with said plug relative to said shell", while claim 56 defines "a shell containing a hollow recess ... [and] an elongate member interposed between said shell and said plug ... in reponse to a torque that is externally applied to said plug and causes rotation ... exiting said recess"<sup>523</sup> while a comparable feature is defined by dependent claim 119, and claim 64 defines "a sidebar ... to travel generally along a radial plane ... [and] an electrical operator ... moving in a different plane independently of said travel by said sidebar"<sup>524</sup> and claim 105 defines "orienting said side bar to travel along a plane ... [and] positioning said locking member to move on an axis that is approximately perpendicular to said plane."<sup>525</sup> Moreover, claim 70 defines "a bar ... to travel generally along a radial plane ... [and] an electrical operator borne by said cylinder plug ... moving along a geometric construct *other than* to said radial plane

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<sup>523</sup> Despite the requirement of 37 CFR §1.104(b)(2) for identifying the "particular part" relied upon to support a rejection, Paper Nos. 39 and 53 are silent upon these details. It appears that in the proposed combination including the second "elongate member" 10, or even 11 of Thordmark '274, that second "elongate member" 10, or 11 must necessarily remain with the recess, or bore, provided by the outer shell of the lock in order for the cylinder plug to rotate. This is contrary to Appellant's claims, and prevents a true retro-fit of a lock cylinder without also a concomitant re-machining, or complete replacement of the outer shell. Moreover, this combination fails to meet the express language of claim 56.

<sup>524</sup> Again, Papers Nos. 39 and 53 pay no moment to the requirement of 37 CFR §1.104(b)(2) for identifying the "particular part" relied upon to support a rejection. In the proposed combination including Thordmark '274, the second "sidebar" 10 must necessarily move with the identical same plane as solenoid 17 (in Fig. 7) or motor 12 (in Figs. 3, 4 and 5), contrary to the express teaching of Appellant's claim 64.

<sup>525</sup> In the proposed combination including Thordmark '274, the second "sidebar" 10 must necessarily move within the identical same plane as solenoid 17 (in Fig. 7) or motor 12 (in Figs. 3, 4 and 5), contrary to the express teaching of Appellant's claim 64.

...<sup>526</sup> Even ignoring *arguendo* that the primary reference is singularly devoid of any structure for bearing a detent, sidebar or bar, and that the Examiner's proposed combination would impermissibly prevent the primary reference from operating in its intended mode of operation by obstructing the ability of the "block pin 38" of "small solenoid 36" of the primary reference to engage its cylinder shell 46, the Examiner's proposed combination lacks teaching or suggestion of claim 46's "bar borne by said plug and rotatable with said plug relative to said shell", claim 56's (and a similar feature defined by claim 119) "shell containing a hollow recess ... [and] an elongate member interposed between said shell and said plug ... in response to a torque that is externally applied to said plug and causes rotation ... exiting said recess"<sup>527</sup>, claim 64's "sidebar ... to travel generally along a radial plane ... [and] an electrical operator ... moving in a different plane independently of said travel by said sidebar",<sup>528</sup> and claim 70's "bar ... to travel generally along a radial plane ... [and] an electrical operator borne by said cylinder plug ... moving along a geometric construct *other than* to said radial plane ..."; consequently the Examiner's proposed combination fails to make a *prima facie* showing of obviousness as is required by the third

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<sup>526</sup> In the proposed combination including Thordmark '274, the second "sidebar" 10 must necessarily move within the identical same plane as solenoid 17 (in Fig. 7) or motor 12 (in Figs. 3, 4 and 5), contrary to the express teaching of Appellant's claim 105.

<sup>527</sup> In the proposed combination including the second "elongate member" 10, or even 11 of Thordmark '274, that second "elongate member" 10, or 11 must necessarily remain with the recess, or bore, provided by the outer shell of the lock in order for the cylinder plug to rotate. This is contrary to Appellant's claims, and prevents a true retro-fit of a lock cylinder without also a concomitant re-machining, or complete replacement of the outer shell. Moreover, this combination fails to meet the express language of claim 56.

<sup>528</sup> In the proposed combination including Thordmark '274, the second "sidebar" 10 must necessarily move within the identical same plane as solenoid 17 (in Fig. 7) or motor 12 (in Figs. 3, 4 and 5), contrary to the express teaching of Appellant's claim 64.

criteria of the *MPEP* §706.02(j).<sup>529</sup>

**Second**, in the Examiner's proposed combination, the placement of a "detent", "sidebar" or "elongate bar" between the solenoid of the primary reference and the cylinder shell would impermissibly prevent the primary reference from being operated in its intended mode of operation with its solenoid 36 moving a "blocking pin 38"<sup>530</sup> engaging<sup>531</sup> "a bore or recess 50"<sup>532</sup> in the cylinder shell; its is these critical features with "an elongate bar ... interposed between said shell and said cylinder plug" which are expressly defined by Appellant's claims 76, 77, 90 and 91. Consequently, this rejection is based upon an impermissible modification of the primary reference, and may not be maintained.

**Third**, the earlier noted fact that the Examiner's proposed modification of the primary reference would prevent the primary reference from being operated in its intended mode of operation, is itself convincing *indicia* of the non-obviousness of these claims.<sup>533</sup>

**Fourth**, there is no evidence of record for modifying the primary reference in the manner asserted by the Examiner, except through a hindsight reconstruction of the art in the light provided

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<sup>529</sup> Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *MPEP* §706.02(j).

<sup>530</sup> Gockebay '777, column 6, line 46.

<sup>531</sup> Gockebay '777, column 6, lines 45 and 46, " Fig 3, show[s] a bore or recess 50 into which the blocking pin 38 extends in the blocking position."

<sup>532</sup> Column 6, line 49.

<sup>533</sup> The Examiner's proposed combination would impermissibly prevent the primary reference from operating in its intended mode of operation by obstructing the ability of the "block pin 38" of "small solenoid 36" of the primary reference to engage its cylinder shell 46.

by Appellant alone. In the Examiner's proposed combination, only Thordmark '274 discloses a movable locking member cooperating with any electrical operator; that movable locking member 11, as well as "latching member 10", is however, borne by the cylinder shell, and not, as defined by Appellant's claims, borne by, or mounted upon, the plug. Naveda '127, which is a rather large case lock, in terms of the physical volume occupied by shell, or housing, of the lock in comparison to the primary reference, is utterly devoid of any cylinder plug, is bereft of a suggestion of a detent or sidebar, and contributes nothing to this proposed modification of the primary reference. In short, there is no evidence of record showing motivation for making the Examiner's proposed combination, and Naveda '127 does nothing to remedy these deficiencies noted in the primary and secondary references. The Federal Circuit has repeatedly emphasized that:

"[t]he test for obviousness is not whether the features of one reference may be bodily incorporated into another reference... Rather, we look to see whether combined teachings render the claimed subject matter obvious." *In re Wood*, 599 F.2d 1032, 202 USPQ 171, 174 (CCPA 1979) (citing *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549-50 (CCPA 1969); *In re Mapelsden*, 329 F.2d 321, 322, 141 USPQ 30, 32 (CCPA 1964).

Here, there is no actual teaching in the Examiner's proposed combination for shifting "a spring biased sidebar 10" anywhere; the primary reference does not require a sidebar and can not fit a sidebar between its blocking pin 38 and its recess 50 without interfering with functional operation; Thordmark '274 already has a "side-bar 7" which has no disclosed relation with its "electronic operator 12"; and Naveda '127 neither discloses nor indicates any need for a sidebar, whether



biased or unbiased.<sup>534</sup> Absent the requisite evidence of motivation for making the Examiner's proposed combination, this rejection may not be sustained.<sup>535</sup>

**Claims 46, 56, 64, 70, 76, 77, 90, 120 and 121**

Independent claim 46 defines "a cylinder plug" with, among other features, "a bar borne by said plug ... and an electrical operator ... moving ... to accommodate said movement of said bar ... ." Claims 56, 64, 70, 76, 77, 90, 120 and 121 use alternative language to define other aspects of this feature. In contradistinction, the Examiner's proposed combination includes a primary reference which requires "a solenoid 36 which is effective *to retract* a blocking pin 38 when energized"<sup>536</sup> in combination with Appellant's "bore or recess 50 into which the blocking pin extends in the blocking position."<sup>537</sup> The degree of completeness required by 37 CFR §1.104(b) in Paper No. 8 is unfortunately absent; there is no evidence of record explaining how the proposed combination can have "solenoid 36" respond to a data signal "by releasing said detent to move" as is required by Appellant's claim 46, when the primary reference teaches that

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<sup>534</sup> The Examiner's reliance upon Naveda '127 as ostensibly teaching miniaturization is evidence of a misguided understanding of the relevant art: the structure of the case lock taught by Naveda '127 is necessarily huge, and substantially external to any cylinder component, when compared to the cylinder locks of Appellant and the primary reference.

<sup>535</sup> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. ... The teaching or suggestion to make the claimed combination and the reasonable expectation of success ***must both be found in the prior art and not based on Appellant's disclosure***. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Emphasis added.

<sup>536</sup> Gockebay '777, column 5, lines 55, 56.

<sup>537</sup> Gockebay '777, column 6, lines 45 and 46.

“solenoid 36” response to application of an electrical current by *holding* “blocking pin 38” in a retracted position when solenoid 36 is “energized”? Despite Appellant’s request in response to Paper No. 39 for clarification under 37 CFR §1.104(a)(b) and (c), no explanation has been forthcoming. Absent the requested clarification, this rejection may not be sustained.

Alternatively, if the Examiner has intended to assert that the proposed combination may be constructed with a wholesale substitution of “electrical operator 12, a movable electronic [*sic*] locking member 11” and latch 10 for the primary reference’s “electrical operator 36 ... [and] member 38”, the Examiner’s proposed combination is flawed because it impermissibly prevents the primary reference from operating in its intended mode of operation with “a bore or recess 50 [drilled into, or preferable through cylinder shell 46] into which blocking pin 38 extends in the blocking position” (*i.e.*, to directly and securely engage the cylinder shell) and concomitantly impermissibly prevents the primary reference from retentively holding “blocking pin 38” in a retracted position when energized.<sup>538</sup> There is no evidence of record teaching this construction and concomitant modification of Gokcebay ‘777, except that provided by Appellant’s claims alone among the art.<sup>539</sup> The mandate for completeness in the administrative record set forth 37

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<sup>538</sup> Under U.S. practice, these teachings of Gockebay ‘777 may not be ignored by the Examiner when constructing the proposed combination. According to MPEP §2141.02, “A prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Construction of the Examiner’s proposed combination to eliminate these features of Gockebay ‘777 is improper under 35 U.S.C. §103(a).

<sup>539</sup> The Examiner’s “obvious reversal of parts and change of size to select miniature logic circuitry and a miniature solenoid and locking member 11 such that the blocking mechanism fits with a conventional sized lock plug as taught by Gokcebay and Naveda” is fictitious and illusory, because there is no evidence of record which either teaches or

CFR §1.104(a), (b) and (c) has not been met here because Paper Nos. 39 and 53 fail to explain how the proposed combination might be constructed to preserve the teaching of the primary reference for “a bore or recess 50 [drilled into, or preferable through cylinder shell 46] into which blocking pin 38 extends in the blocking position” (*i.e.*, to directly and securely engage the cylinder shell) and concomitantly impermissibly prevents the primary reference from retentively holding “blocking pin 38” in a retracted position when energized. Clarification was previously requested, but was not provided. Consequently, the record before the Examiner does not support this rejection. Refusal to sustain this rejection is respectfully requested.

Under 35 U.S.C. §103(a),

“combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability. *In re Dembiczak*, 175 F.3d 994, 50 USPQ.2d 1614 (Fed. Cir. 1999).

Consequently, this alternative construction is untenable, not only because it impermissibly prevents the primary reference, as modified by the two secondary references, from operating in its intended mode of operation, but also because neither of the two secondary references provide the specific motivation to construct Appellant’s “a plug” with, among other features, “a detent disposed between said plug and a cylinder ... an electrical operator borne by ... and rotating with said plug ... releasing said detent to move ... .” Given this failure of a *prima facie* requisite

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suggest the “obvious reversal.”

showing of the obviousness under the criteria of §706.02(j) of the *Manual*,<sup>540</sup> the Examiner is respectfully requested to refuse to sustain this rejection.

#### **Claim 46**

Claim 46 was rejected under 35 U.S.C. §103(a) as rendered obvious by proposed combination of Gokcebay '777 modified according to the Thordmark U.S. 5,542,274 in view of Naveda U.S. 4,416,127. Appellant respectfully traverses this rejection for the following reasons.

**First**, the lock defined by claim 46 has a “bar borne by said plug ... interposed between said shell and said cylinder plug to reciprocate generally along a radial plane” in combination with “an electrical operator ... obstructing movement of said bar ... in response to a first state of said control signal and by moving within a second and different plane not coextensive with said radial plane in response to application of said control signal ... .” The Examiner neglected to explain how movement in different planes could be obtained by the proposed combination; in fact, all movement in the proposed combination exists within the same plane. That is, how can the Examiner’s proposed combination be configured so that moveable coil 17 and blocking element 11 of Thordmark ‘274 move along non-aligned planes, a feature that provides a mechanical advantage and heightened security that is not available with the proposed combination. Accordingly, there is no *prima facie* showing of obviousness, and claim 46 is readily patentably

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<sup>540</sup> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. ... The teaching or suggestion to make the claimed combination ... ***must ... be found in the prior art and not based on Appellant's disclosure.*** In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

distinguishable over the prior art.

**Second**, and as earlier noted, Appellant's lock defined by claim 46 has a "bar borne by said plug ... interposed between said shell and said cylinder plug to reciprocate generally along a radial plane" in combination with,

"an electrical operator ... obstructing movement of said bar ... in response to a first state of said control signal and by moving within a second and different plane not coextensive with said radial plane in response to application of said control signal ... ."

These features are wholly absent from the Examiner's proposed combination because the modification of Gokcebay '777 made by the Examiner has a "latching element 10, therewith enabling the latching element [10 of the proposed combination] to be pressed *radially outwards as the plug 3 is turned with the key 4.*" Thordmark '274, col. 5, lines 24-26. Whether by some force of magic or by simple hindsight reconstruction of the art, if moving coil 17 is somehow incorporated into cylinder plug 24 of Gokcebay '777, that same radially outward motion will remain as a constant. The fact that latching member 10 can not both travel *radially outwardly* as the cylinder plug rotates as is taught by the Examiner's proposed combination and be carried by the cylinder plug as the plug rotates as is defined by Appellant's claim 46, prevents the Examiner's proposed combination from providing Appellant's "bar borne by said plug ... interposed between said shell and said cylinder plug to reciprocate generally along a radial plane ... ." This difference is not trivial and must be considered in determining obviousness *vel non* because it is this difference that enables Appellant's bar to be carried with the cylinder plug and to cooperate with another locking mechanism carried by the cylinder plug. The Examiner's

combination can no provide this advantage. Accordingly, claim 46 is patentably distinguishable and allowable.

### **Claims 14 and 43**

The record before the Examiner demonstrates that the Examining Staff has impermissibly neglected to examine “the subject matter” of claims 14 and 43 “as a whole” as required under the first paragraph of 35 U.S.C. §103. Specifically, the secondary locking mechanism of both Gokcebay '777 and Thordmark '274 operate wholly, completely and independently of their respectively pin tumblers and side tumblers, while Naveda '127 discloses but a single mechanism devoid of any secondary locking feature; consequently, the proposed combination of art can not be interpreted as teaching Appellant’s “elongate member” that provides “simultaneously engagement of said cylinder and said plug” in combination with “electrical operator” that is disposed to maintain “said simultaneously engagement” provided by the elongate member. Neither the solenoid 36 and pin 38 of the primary reference nor the coil 17 of the secondary reference may be said to maintain Appellant’s simultaneously engagement provided by the elongate member between the cylinder and the plug. There is no *prima facie* showing of obviousness. It is this cooperation between the elements of Appellant’s structure that has resulted in a compound mechanism that is both compact and reliable with the electrical operator reinforcing the locking provided by the apparatus. In view of these and other distinctions, as well as the noted advantages flowing from those distinctions, the Examiner’s proposed combination improperly fails to consider the “subject matter as a whole” and is required by 35 U.S.C. §103, and the rejection must be withdrawn.

As was earlier noted, both the primary and secondary references rely upon bitted keys and the corresponding pin tumblers to provide their primary locking functions. As was also earlier noted, with the exception of Naveda '127 which has but a single locking mechanism, both of those primary locking functions are structurally independent of the "secondary locking 'high security' mechanical features" (see Gokcebay '777, col. 6, lines 55, 56). The Examiner's comments under 37 C.F.R. §1.104(c)(2) tend to become rambling and fail to clearly designate "the particular part relied on" in the three references that form the proposed combination. To the extent that the Examiner proposes to place the moving coil 17 and armature 18 of Thordmark '274 into the plug of Gokcebay '777 in accordance with an obscure and unidentified teaching of Naveda '127, moving coil 71 and armature 18 will surely displace the "conventional pin tumbler mechanical bittings" of Gokcebay (see Gokcebay '777, col. 6, line 62) from the cylinder plug and concomitantly, impermissibly destroy the ability of the primary reference to rely upon those "conventional pin tumbler mechanical bittings" as the primary locking mechanical feature; this is an improper combination under 35 U.S.C. §103 and may not be relied upon to support an obviousness rejection.

To the extent that the Examiner intends to have moveable coil 17 and blocking element 11 of Thordmark '274 in a radial orientation in the proposed combination, that configuration will simply replace solenoid 36 and blocking pin 38 of the primary reference because moveable coil 17 and blocking element 11 travel together. Moreover, blocking element 11 has no useful function in such a configuration. Furthermore, this configuration will still not meet the several features of claims 14 and 43 that are noted in the foregoing paragraphs, and the Examiner's

reliance upon Naveda '127 will not remedy these deficiencies.

**Claims 25, 26, 28, 30 through 33, 39 through 42, 46 through 52, 54, 56, 64, 70, 76, 77, 90, 91, 105, 108, 109, 111, 113 through 116, 119, 120**

The rejection of claims 25, 26, 28, 30 through 33, 39 through 42, 46 through 52, 54, 56, 64, 70, 76, 77, 90, 91, 105, 108, 109, 111, 113 through 116, 119, 120 as rendered obvious, and unpatentable over the Examiner's proposed combination is unsustainable on the record before the Examiner.

**First**, the combination proposed by the Examiner would impermissibly destroy the ability of the primary reference to operate in its intended mode of operation. Gokcebay '777 expressly teaches a radially oriented solenoid 36 and blocking pin 38, together with the pin tumbler relied upon by the Examiner.<sup>541</sup> The alternative embodiment illustrated by Figure 7 of Thordmark '274 that is relied upon by the Examiner includes side tumblers 5 and side bar 7 mounted in the cylinder plug 3, while the coil 17 and the blocking element 11 are mounted within the shell rather than within the cylinder plug. Gokcebay '777 however, expressly teaches in col. 3, beginning with line 2, that all of electronics and hardware are “contained in the cylinder plug”, and that nothing is “required outside of the lock cylinder” aside

“from a small recess or bore which is provided in the cylinder shell.”

This is a critical distinction because the combination proposed by the Examiner relies upon the hardware and electronics of Thordmark '274 that are necessarily housed within the shell, rather

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<sup>541</sup> Gokcebay '777, column 6, lines 61 and 62.



than within the cylinder plug as required by the primary reference. Moreover, that combination eliminates the small recess or bore of the primary reference, which the primary reference relies upon to assure a positive locking by allowing “for secondary locking high security mechanical features, generally located in side of the cylinder plug.” See Gokcebay ‘777 at col. 6, beginning with 55. Consequently, the Examiner’s proposed combination fails to provide Appellant’s “electronically powered drive mechanism located within the barrel *and cooperating with* the electromechanical locking member to selectively move the locking member from the barrel blocking position ... .” In short, both the simplicity and the secondary locking of the primary reference are removed by the Examiner’s proposed combination.

**Second**, it is unclear whether the Examiner’s proposed combination relies upon the pin tumblers (not shown, col. 6, lines 61-62) of Gokcebay ‘777 or the “latching element 10” of Thordmark ‘274, to meet Appellant’s pending claims. An analysis of the Examiner’s proposed combination incorporating the pin tumblers (not shown, col. 6, lines 61-62) of Gokcebay ‘777 is discussed in the preceding paragraph. To the extend that the Examiner incorporates the “latching element 10” of Thordmark ‘274 to meet the language of Appellant’s pending claims, there are two structural impediments which make the Examiner’s proposed combination untenable. First, claim 90 defines a structure with “a side bar ... [and] an electronically powered drive mechanism located within the barrel *and cooperating with* the electromechanical locking member to selectively move the locking member from the barrel blocking position to the non-barrel blocking position in which the side bar moves out of the cavity ...” and “an electromechanical locking member disposed within the barrel member ... positionable to permit the side bar to engage the locking member in a non-

barrel blocking position... .” In contradistinction, in the Examiner’s proposed combination, coil 17, blocking element 11 and latching element 10 of Thordmark ‘274 must reside in the cylinder shell in order to accommodate the existence of the top tumblers and side tumblers 5 for top code 4a and side code 4b that, as shown by Figs. 1 and 2, extend over substantially the entire axial length of plug 3. Second, coil 17, blocking element 11 and latching element 10 of Thordmark ‘274 are mounted within an axial recess. Wholly absent from the art relied upon by the Examiner to make this proposed combination is any teaching or suggestion of how to alter the configuration of coil 17, blocking element 11 and latching element 10 of Thordmark ‘274 (that form the “secondary locking high security mechanical features” required by Gokcebay ‘777) to fit within the mass of plug 3 without displacing the combination of the keyway and the primary locking mechanism (formed by the top tumblers and side tumblers 5 for top code 4a and side code 4b). Appellant submits that any miniaturization of the “secondary locking high security mechanical features” that may be required by Gokcebay ‘777) in order to fit within the mass of plug 3 would necessarily diminish the ability of latching element 10 to resist “shear forces at the interface between plug and lock cylinder.”<sup>542</sup> This miniaturization of the configuration of coil 17, blocking element 11 and latching element 10 of Thordmark ‘274 in order to mount these components within the plug of Gokcebay ‘777 essentially reduces latching element 10 to nothing more than “a latching pin.” This is hardly an enhancement of security as is asserted by the Examiner. It should be noted however, that the Examiner’s proposed combination incorporating Thordmark ‘274 expressly warns that such structures as “latching pins or like devices will fracture even when only a relatively moderate

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<sup>542</sup> See Thordmark ‘274, at column 2, lines 54-57.

force is used on the lock, therewith enabling the lock to be opened.”<sup>543</sup> In short, the Examiner’s proposed combination is a deliberate and improper weakening of the “high security” demanded by Gokcebay ‘777 of such secondary locking mechanical features.<sup>544</sup>

The suggestions of Naveda ‘127 about the “size or geometric shape” of a key,<sup>545</sup> and the presence of an “electromagnet” that is “located in the receiver or alternatively in the body of the key”,<sup>546</sup> are immaterial to these issues raised by the Examiner’s miniaturization of the configuration of coil 17, blocking element 11 and latching element 10 of Thordmark ‘274 in order to mount these components within the plug of Gokcebay ‘777 because Naveda ‘127 teaches nothing about Appellant’s barrel member. Moreover, the “electromagnetic 36” of Naveda ‘127 is structurally and functionally different from Appellant’s “electronically powered drive mechanism.” Incorporation of “electromagnetic 36”, which is not small in size, into the plug of Gokcebay ‘777 will remedy none of the deficiencies in the Examiner’s proposed combination noted earlier in this response.

In view of the fact that both the primary and secondary references teach away from such diminution of security, and nothing in Naveda ‘127 neither teaches nor suggests how to accommodate the presence of both the combination of the keyway 26 (of Gockebay ‘777) and the primary locking mechanism (formed for example, by the top tumblers and side tumblers 5 for top

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<sup>543</sup> Thordmark ‘274, col. 2, lines 57-61.

<sup>544</sup> See Gokcebay ‘777, at column 6, lines 55-56.

<sup>545</sup> Naveda ‘127, the “size or geometric shape” of a key (col. 4, line 60).

<sup>546</sup> Naveda ‘127, column 9, lines 22-25.

code 4a and side code 4b) and the configuration of coil 17, blocking element 11 and latching element 10 of Thordmark '274. In contradistinction, Appellant's structure alone allows for a sidebar that may be axially extended over the entire length of the junction between the shell and the cylinder plug, a structure that, unlike the Examiner's proposed miniaturization, is better able to resist "shear forces at the interface between plug and lock cylinder." See Thordmark '274, at column 2, lines 54-57. Moreover, the Examiner's proposed combination makes no provision for either "side bar cooperating between the shell and the barrel ... wherein at least one electromechanical locking member is disposed within the barrel and is positionable in a barrel blocking position" as defined by claim 85 or the "locking member including a groove" that is "disposed within the recess of the barrel member" defined by Appellant's claim 89.

In short, formation of the axial recess in cylinder plug 24 of Gokcebay '777 necessary to accommodate the configuration of the secondary locking mechanism of coil 17, blocking element 11 and latching element 10 of Thordmark '274 would essentially cleave plug 24 in two, with the T-shaped element 20 on one side of the cleave and latching element 10 protruding from the other side of that cleave, while any miniaturization of the secondary locking mechanism would be contrary to the express teachings of Thordmark '274 and would diminish the security which both Gokcebay '777 and Thordmark '274 teach; under 35 U.S.C. §103 the Examiner can not alone modify the structures taught by the primary and secondary references in a manner that would defeat the expressly articulated goal of those references. These deficiencies in the Examiner's proposed combination, together with the enhancement of the security provided thereby, are evidence of the non-obviousness of the lock defined by the structure of claims 85 through 89. Reversal of this

rejection is therefore required.

There is simply neither basis nor motivation for making the combination proposed by the Examiner except as an impermissible hindsight reconstruction of the art in the light provided only by Appellant's claims. Thordmark '247 expressly denigrates the use of "radially directed elements" such as that taught by Gokcebay '777,<sup>547</sup> and expressly states that his structure "is to eliminate the aforesaid drawbacks" (see Thordmark '274, col. 2, lines 64-65) that are attendant upon those "radially directed elements" while Naveda '127 is completely silent on the efficacy of structures such as those taught by the primary reference. Neither the express limitations of Appellant's claims nor this express denigration of the Examiner's proposed combination may be ignored in a determination of obviousness *vel non* because this denigration by the secondary reference expressly negates the requisite motivation necessary to make the Examiner's proposed combination under 35 U.S.C. §103. Accordingly, the rejection is improper and can not stand.

#### **Claims 47, 48 and 51**

Dependent claims 47, 48 and 51, further define the structure of parent claim 46, albeit in terms of the operator. Contrary to the Examiner's assertions, neither Naveda '127 nor Thordmark '274 nor Gockebay '777 advocates both insertion of an electrical operator into the cylinder plug and some interaction between that plug borne operator and a bar, elongated member or sidebar that is able to make simultaneous engagement of both the shell and cylinder plug, because:

- Gockebay '777 teaches only insertion of a solenoid within the cylinder,

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<sup>547</sup> See Thordmark '274, col. 2, lines 50-60.

- Gockebay '777 is wholly devoid of any bar (other than the armature 18 that is itself a part of solenoid 17),

- Gockebay '777 is wholly devoid of any bar that provides any type of engagement between the shell and cylinder,

- Thordmark '274 teaches nothing about insertion of any operator within the cylinder,

- both Gockebay '777 and Thordmark '274 require not only complete replacement of the cylinder, but major alteration of the shell in order to accommodate a retrofit,

- both Gockebay '777 and Thordmark '274 are utterly incapable of providing any interaction with their primary locking mechanical features, and

- Naveda '127 is singularly devoid of any teaching of a cylinder plug and discloses no primary mechanical locking mechanism as is required by both Gockebay '777 and Thordmark '274,

- Naveda '127 fails to describe how traveling coil 17, armature 18 and latching element 10 of Fig. 7 of Thordmark '274 incorporated into the plug of Gockebay '777.

In contradistinction, Appellant's claims define a structure with an electrical operator borne by the cylinder plug, a member moving in response to the operator, and interaction between the operator and a bar interposed between the shell and the cylinder plug. The fact that the art is singularly and uniformly silent on this small advance may not be ignored in any determination of the obviousness *vel non* based upon "the differences between the subject matter sought to be patented and the prior art ... ."<sup>548</sup>

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35 U.S.C. §103(a).

**Claim 49**

Unlike the structures found in the Examiner's proposed combination with separate and independent mechanical and electromagnetic locking mechanisms, claim 49 defines a structure with an integration of the structure as well as the operation of "obstructing movement" of the cylinder plug relative to the shell, a feature neither taught nor illustrated by the Examiner's proposed combination. Consequently, the administrative record fails to provide a *prima facie* showing of obviousness.

**Claim 56**

Claim 56 was rejected under 35 U.S.C. §103(a) as rendered obvious by proposed combination of Gokcebay '777 modified according to the Thordmark U.S. 5,542,274 in view of Naveda U.S. 4,416,127. Appellant respectfully traverses this rejection for the following reasons.

The lock defined by claim 56 has "an elongate member interposed between said shell and said plug to travel generally along a radial direction" in combination with "an electrical operator responding to said control signal by moving in a second direction not aligned with said radial direction ... obstructing said travel ... ." Wholly absent from the Examiner's proposed combination is any teaching of how an electrical operator formed by moveable coil 17 and blocking element 11 of Thordmark '274 could be made to travel in any direction that is not aligned with said radial direction." Moreover, the Examiner's comments have neglected to explain how movement in different planes could be obtained by the proposed combination; in fact, all movement in the proposed combination exists only within the same plane. Accordingly, there is no *prima facie*

showing of obviousness, and claim 56 is readily patentably distinguishable over the prior art.

**Claims 64, 65, 70, 75, 76 and 77**

Independent claims 64, 65, 70, 75, 76 and 77 were rejected under 35 U.S.C. §103(a) as rendered obvious by proposed combination of Gokcebay '777 modified according to the Thordmark U.S. 5,542,274 in view of Naveda U.S. 4,416,127. Appellant respectfully traverses this rejection for the following reasons.

**First**, the lock defined by claim 64 uses “a bar interposed between said shell and said cylinder plug to travel generally along a radial plane” in combination with “an electrical operator borne by said cylinder plug and rotatable with said plug, said electrical operator being electrically operable to respond to said control signal by moving independently of said travel by said bar, between one of a first orientation providing obstruction of said travel and a second and different orientation accommodating *said travel* ... .” As defined by claim 65, Appellant’s lock uses “a bar interposed between said shell and said cylinder plug to travel generally along a radial plane” in combination with “an electrical operator borne by said cylinder plug and rotatable with said plug, said electrical operator being electrically operable to respond to said control signal by moving in a second direction not aligned with said radial direction ... obstructing *said travel* ... .” Claim 70 uses “a bar interposed between said shell and said cylinder plug to travel generally along a radial plane” in combination with “an electrical operator borne by said cylinder plug and rotatable with said plug, said electrical operator being electrically operable to respond to said control signal by moving along a geometric construct other than to said radial plane between one of a first



orientation providing obstruction of said travel and a second and different orientation accommodating said travel ... .” Claim 75 uses “a bar interposed between said shell and said cylinder plug to travel generally along a radial plane” in combination with “an electrical operator borne by said cylinder plug and rotatable with said plug, said electrical operator being electrically operable to respond to said control signal by moving along a radial axis that is transverse to said radial plane between a first orientation providing obstruction of said travel and a second and different orientation accommodating said travel ... .” Claim 76 uses “an elongate bar exhibiting a greatest longitudinal dimension along a second axis that extends transversely to said first base and to said second base, said bar being interposed between said shell and said cylinder plug to travel generally along a radial axis that is transverse to said second axis ... “ in combination with “an electrical operator borne by said cylinder plug and rotatable with said plug, said electrical operator being electrically operable to respond to said control signal by moving along said radial axis between one of a first orientation providing obstruction of *said travel* and a second and different orientation accommodating *said travel* ... .” Claim 77 however, uses “an elongate bar exhibiting a greatest longitudinal dimension along a second axis that extends transversely to said first base and to said second base, said bar being interposed between said shell and said cylinder plug to travel generally along a radial axis that is radial to said cylinder plug and transverse to said second axis, between a first position engaging both said shell and said plug while obstructing rotation of said cylinder plug within said recess ...” together with “an electrical operator borne by said cylinder plug and rotatable with said plug ... to respond to a control signal by moving between one of a first orientation providing obstruction of *said travel* ... .” Not only does the Examiner’s

proposed combination fail to meet these varied express geometric definitions, but Appellant's interaction between an electrical operator borne by and rotatable with the cylinder plug and the travel of the bar interposed between the shell and the cylinder plug is not found in the prior art, either taken as individual references or in the combination proposed by the Examiner simply because all of the references relied upon by the Examiner uniformly restrict movement to within a single plane. The substitution of moveable coil 17, blocking element 11 and latching element 10 of Thordmark '274 for solenoid 36 and blocking pin 38 of Gokcebay '777 necessary to construct the Examiner's proposed combination will prevent the proposed combination from achieving Appellant's travel and orientation. Consequently, the Examiner has failed to make a *prima facie* showing of obviousness. It is this difference in geometric movement, together with the defined inter-cooperation that advantageously endow Appellant's embodiments with the enhanced security of the locking function that is available with neither the primary or either of the two secondary references. Independent claims 64, 65, 70, 75 and 76 are therefore patentably distinguishable, and allowable under 35 U.S.C. §103(a).

**Second**, the sole motivation provided in the art for the combination proposed by the Examiner is an impermissible reconstruction of the art in the light provided by Appellant alone. This, by itself, is convincing indicia of the patentability of claims 64, 65, 70, 75 and 76 under 35 U.S.C. §103.

**Third**, ostensibly the prior art relied upon by the Examiner endeavors to provide a lock that may be easily retrofitted. Gokcebay '777 however, requires that a bore 50 be drilled within the shell of the existing lock while Thordmark '274 requires that a separate V-shaped groove 3c that

is spaced-apart and distinct from the slot for sidebar 7, be machined within the cylinder, and that the entire recess shown in Figure 1 be machined into the shell. Contrary to the Examiner's assertions, neither Naveda '127 nor Thordmark '274 nor Gockebay '777 advocates both insertion of an electrical operator into the cylinder plug and some interaction between that plug borne operator and a bar, elongated member or sidebar that is able to make simultaneous engagement of both the shell and cylinder plug, because:

- Gockebay '777 teaches only insertion of a solenoid within the cylinder,
- Gockebay '777 is wholly devoid of any bar (other than the armature 18 that is itself a part of solenoid 17),
- Gockebay '777 is wholly devoid of any bar that provides any type of engagement between the shell and cylinder,
- Thordmark '274 teaches nothing about insertion of any operator within the cylinder,
- both Gockebay '777 and Thordmark '274 require not only complete replacement of the cylinder, but major alteration of the shell in order to accommodate a retrofit,
- both Gockebay '777 and Thordmark '274 are utterly incapable of providing any interaction with their primary locking mechanical features, and
- Naveda '127 is singularly devoid of any teaching of a cylinder plug and discloses no primary mechanical locking mechanism as is required by both Gockebay '777 and Thordmark '274,
- Naveda '127 fails to describe how traveling coil 17, armature 18 and latching element 10 of Fig. 7 of Thordmark '274 incorporated into the plug of Gockebay '777.

In contradistinction, Appellant's claims define a structure with an electrical operator borne by the cylinder plug, a member moving in response to the operator, and interaction between the operator and a bar, elongate member or sidebar interposed between the shell and the cylinder plug. Although these differences may appear to be but a small advance in the art, the advantages flowing from these differences are substantial. For example, only Appellant's claims define a structure with an electronic operator borne by the cylinder plug that interacts with a sidebar, elongate member or bar, and that consequently, is able to advantageously both retrofit an installed lock by the expedient of replacing only the cylinder plug *without any* alteration of the shell and to *interact or cooperate with* an existing sidebar of a primary mechanical locking mechanism that is positioned between the shell and plug. The fact that both Gockebay '777 and Thordmark '274 are concerned with retrofitting of existing locks, a fact noted by the Examiner, and that both references require modification of the shell of the lock in order to complete that retrofitting, while Appellant alone provides a cylinder plug that may work with an existing sidebar and may be retrofit without any modification of the shell is a difference between the prior art and the structure defined by the pending claims that prevents the subject matter as a whole from being obviousness under 35 U.S.C. §103. This deficiency in the Examiner's proposed combination is not remedied by Naveda '127. Moreover, this deficiency is highlighted by the fact that Thordmark '274 clearly avoids either teaching or suggestion of any interaction or cooperation between sidebar 7 and coil 17.

This interaction with the existing sidebar beneficially enhances the security provided by Appellant's lock. Neither Gockebay '777, Thordmark '274 nor Naveda '127, nor the Examiner's proposed combination of Gockebay '777, Thordmark '274 and Naveda '127 are able to provide

these advantages. Moreover, the Examiner's proposed combination is incomplete and fails to make a *prima facie* showing of obviousness; how, for example, is the traveling coil 17, armature 18 and latching element 10 of Fig. 7 of Thordmark '274 incorporated into the plug of Gockebay '777? No details of such a combination are provided by the Examiner's proposed combination. Accordingly, in view of these differences between the pending claims and the prior art, "the subject matter as a whole" can not be found to be rendered obvious under 35 U.S.C. §103. In short, the Examiner has unfairly sought to limit the scope of coverage to which Appellant is entitled by reconstructing the art in an effort to meet the terms of Appellant's claims when none of that art suggests such a simple modification of the art as Appellant's electrical operator being both borne by and rotating with the cylinder plug *and* operating to block the travel of a sidebar. Accordingly, reversal of this rejection is required.

#### **Claim 90**

Independent claims 90, which Appellant copied from claim 19 of the Field U.S. Patent No. 5,839,307, was rejected under 35 U.S.C. §103(a) as rendered obvious by proposed combination of Gokcebay '777 modified according to the Thordmark U.S. 5,542,274 in view of Naveda U.S. 4,416,127. Appellant respectfully traverses this rejection for the following reasons.

**First**, Appellant notes that the Examiner improperly asserted that independent claim 90, copied from claim 19 of Field '307 patent, was withdrawn from consideration, even though claim 90 defines the salient features of Appellant's elected species. Moreover, the field of search is co-extensive with the elected species. Consideration of claim 90 is therefore required.

**Second**, the combination proposed by the Examiner would impermissibly destroy the ability of the primary reference to operate in its intended mode of operation. Gokcebay '777 expressly teaches a radially oriented solenoid 36 and blocking pin 38, together with the pin tumbler relied upon by the Examiner, mentioned in col. 6, lines 61 and 62. The alternative embodiment illustrated by Figure 7 of Thordmark '274 that is relied upon by the Examiner includes side tumblers 5 and side bar 7 mounted in the cylinder plug 3, while the coil 17 and the blocking element 11 are mounted within the shell rather than within the cylinder plug. Gokcebay '777 however, expressly teaches in col. 3, beginning with line 2, that all of electronics and hardware are “contained in the cylinder plug”, and that nothing is “required outside of the lock cylinder” aside “from a small recess or bore which is provided in the cylinder shell.” The combination proposed by the Examiner relies upon the hardware and electronics of Thordmark '274 that are necessarily housed within the shell, rather than within the cylinder plug as required by the primary reference. Moreover, that combination eliminates the small recess or bore of the primary reference, which the primary reference relies upon to assure a positive locking by allowing “for secondary locking high security mechanical features, generally located in side of the cylinder plug.” See Gokcebay '777 at col. 6, beginning with 55. Consequently, the Examiner’s proposed combination fails to provide Appellant’s “electronically powered drive mechanism located within the barrel *and cooperating with* the electromechanical locking member to selectively move the locking member from the barrel blocking position ... .” In short, both the simplicity and the secondary locking of the primary reference are removed by the Examiner’s proposed combination.

**Third**, it is unclear whether the Examiner’s proposed combination relies upon the pin

tumblers (not shown, col. 6, lines 61-62) of Gokcebay '777 or the "latching element 10" of Thordmark '274, to meet Appellant's pending claims. An analysis of the Examiner's proposed combination incorporating the pin tumblers (not shown, col. 6, lines 61-62) of Gokcebay '777 is discussed in the preceding paragraph. To the extent that the Examiner incorporates the "latching element 10" of Thordmark '274 to meet the language of Appellant's pending claims, there are two structural impediments which make the Examiner's proposed combination untenable. First, claim 90 defines a structure with "a side bar ... [and] an electronically powered drive mechanism located within the barrel *and cooperating with* the electromechanical locking member to selectively move the locking member from the barrel blocking position to the non-barrel blocking position in which the side bar moves out of the cavity ..." and "an electromechanical locking member disposed within the barrel member ... positionable to permit the side bar to engage the locking member in a non-barrel blocking position..." In contradistinction, in the Examiner's proposed combination, coil 17, blocking element 11 and latching element 10 of Thordmark '274 must reside in the cylinder shell in order to accommodate the existence of the top tumblers and side tumblers 5 for top code 4a and side code 4b that, as shown by Figs. 1 and 2, extend over substantially the entire axial length of plug 3. Second, coil 17, blocking element 11 and latching element 10 of Thordmark '274 are mounted within an axial recess. Wholly absent from the art relied upon by the Examiner to make this proposed combination is any teaching or suggestion of how to alter the configuration of coil 17, blocking element 11 and latching element 10 of Thordmark '274 (that form the "secondary locking high security mechanical features" required by Gokcebay '777) to fit within the mass of plug 3 without displacing the combination of the keyway and the primary locking mechanism

(formed by the top tumblers and side tumblers 5 for top code 4a and side code 4b). Appellant submits that any miniaturization of the “secondary locking high security mechanical features” that may be required by Gokcebay ‘777) in order to fit within the mass of plug 3 would necessarily diminish the ability of latching element 10 to resist “shear forces at the interface between plug and lock cylinder.”<sup>549</sup> This miniaturization of the configuration of coil 17, blocking element 11 and latching element 10 of Thordmark ‘274 in order to mount these components within the plug of Gokcebay ‘777 essentially reduces latching element 10 to nothing more than “a latching pin.” This is hardly an enhancement of security as is asserted by the Examiner. It should be noted however, that the Examiner’s proposed combination incorporating Thordmark ‘274 expressly warns that such structures as “latching pins or like devices will fracture even when only a relatively moderate force is used on the lock, therewith enabling the lock to be opened.”<sup>550</sup> In short, the Examiner’s proposed combination is a deliberate and improper weakening of the “high security” demanded by Gokcebay ‘777 of such secondary locking mechanical features.<sup>551</sup>

The suggestions of Naveda ‘127 about the “size or geometric shape” of a key,<sup>552</sup> and the presence of an “electromagnet” that is “located in the receiver or alternatively in the body of the key”,<sup>553</sup> are immaterial to these issues raised by the Examiner’s miniaturization of the

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<sup>549</sup> See Thordmark ‘274, at column 2, lines 54-57.

<sup>550</sup> Thordmark ‘274, col. 2, lines 57-61.

<sup>551</sup> See Gokcebay ‘777, at column 6, lines 55-56.

<sup>552</sup> Naveda ‘127, the “size or geometric shape” of a key (col. 4, line 60).

<sup>553</sup> Naveda ‘127, column 9, lines 22-25.



configuration of coil 17, blocking element 11 and latching element 10 of Thordmark '274 in order to mount these components within the plug of Gokcebay '777 because Naveda '127 teaches nothing about Appellant's barrel member. Moreover, the "electromagnetic 36" of Naveda '127 is structurally and functionally different from Appellant's "electronically powered drive mechanism." Incorporation of "electromagnetic 36", which is not small in size, into the plug of Gokcebay '777 will remedy none of the deficiencies in the Examiner's proposed combination noted earlier in this response.

In view of the fact that both the primary and secondary references teach away from such diminution of security, and nothing in Naveda '127 neither teaches nor suggests how to accommodate the presence of both the combination of the keyway 26 (of Gockebay '777) and the primary locking mechanism (formed for example, by the top tumblers and side tumblers 5 for top code 4a and side code 4b) and the configuration of coil 17, blocking element 11 and latching element 10 of Thordmark '274. In contradistinction, Appellant's structure alone allows for a sidebar that may be axially extended over the entire length of the junction between the shell and the cylinder plug, a structure that, unlike the Examiner's proposed miniaturization, is better able to resist "shear forces at the interface between plug and lock cylinder." See Thordmark '274, at column 2, lines 54-57. Moreover, the Examiner's proposed combination makes no provision for either "side bar cooperating between the shell and the barrel ... wherein at least one electromechanical locking member is disposed within the barrel and is positionable in a barrel blocking position" as defined by claim 85 or the "locking member including a groove" that is "disposed within the recess of the barrel member" defined by Appellant's claim 89.

In short, formation of the axial recess in cylinder plug 24 of Gokcebay '777 necessary to accommodate the configuration of the secondary locking mechanism of coil 17, blocking element 11 and latching element 10 of Thordmark '274 would essentially cleave plug 24 in two, with the T-shaped element 20 on one side of the cleave and latching element 10 protruding from the other side of that cleave, while any miniaturization of the secondary locking mechanism would be contrary to the express teachings of Thordmark '274 and would diminish the security which both Gokcebay '777 and Thordmark '274 teach; under 35 U.S.C. §103 the Examiner can not alone modify the structures taught by the primary and secondary references in a manner that would defeat the expressly articulated goal of those references. These deficiencies in the Examiner's proposed combination, together with the enhancement of the security provided thereby, are evidence of the non-obviousness of the lock defined by the structure of claim 90. Reversal of this rejection is therefore required.

### Claim 90

Independent process claims 90 defines a process of "retrofitting a mechanical cylinder lock to form an electromechanical cylinder lock". The Examiner's proposed combination requires a "recess or bore 50" in order to meet the express teachings of the primary reference, namely that:

"this bore, recess or groove 50 is the only modification **required** in the entire lock ... the bore or recess 50 is **easily formed** by drilling a hole through the cylinder shell or forming an internal recess or groove on the inside surface of the cylinder shell" <sup>554</sup>

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<sup>554</sup> Gockebay '777, column 46 - 51; column 6, lines 45 and 46 states that " Fig 3, show[s] a bore or recess 50 into which the blocking pin 38 extends in the blocking position."

Appellant's process neither uses nor requires a modification of the shell to accommodate the process of rejected claim 90. Recognizing that the Examiner's modification of the primary reference in a manner which prevents the operation of the primary reference in its intended mode, is impermissible, not only is there no evidence of motivation in the record to support the Examiner's proposed process, but the fact that Appellant's process advantageously eliminates this awkward step of first removing, and then drilling the cylinder shell, is further evidence of non-obviousness of the processes of claim 90. Given this evidence, and the advantageous results flowing therefrom, claim 90 is allowable over the prior art.

#### **Claim 91**

Claim 91 was rejected under 35 U.S.C. §103(a) as rendered obvious by the proposed combination of Gokcebay '777 modified according to the Thordmark U.S. 5,542,274 in view of Naveda U.S. 4,416,127. Appellant respectfully traverses this rejection for the following reasons.

**First**, the lock defined by claim 91 uses "a bar interposed between said shell and said cylinder plug to reciprocate generally along a radial plane" in combination with "an electrical operator borne by said cylinder plug and rotatable with said plug, said electrical operator being electrically operable to respond to said control signal by moving independently of said bar between a first orientation providing obstruction of *said reciprocation* by said bar and a second and different orientation removing said obstruction." The sole motivation provided in the art for the combination proposed by the Examiner is an impermissible reconstruction of the art in the light provided by Appellant alone. This, by itself, is convincing indicia of the patentability of claims

64, 65, 70, 75 and 76 under 35 U.S.C. §103.

**Second**, ostensibly, all of the art relied upon by the Examiner endeavors to provide a lock that may be easily retrofitted. Gokcebay '777 however, requires that a bore 50 be drilled within the shell of the existing lock while Thordmark '274 requires that a separate V-shaped groove 3c that is spaced-apart and distinct from the slot for sidebar 7, be machined within the cylinder, and that the entire recess shown in Figure 1 be machined into the shell. Contrary to the Examiner's assertions, neither Naveda '127 nor Thordmark '274 nor Gockebay '777 advocates both insertion of an electrical operator into the cylinder plug and some interaction between that plug borne operator and a bar, elongated member or sidebar that is able to make simultaneous engagement of both the shell and cylinder plug, because:

- Gockebay '777 teaches only insertion of a solenoid within the cylinder,
- Gockebay '777 is wholly devoid of any bar (other than the armature 18 that is itself a part of solenoid 17),
- Gockebay '777 is wholly devoid of any bar that provides any type of engagement between the shell and cylinder,
- Thordmark '274 teaches nothing about insertion of any operator within the cylinder,
- both Gockebay '777 and Thordmark '274 require not only complete replacement of the cylinder, but major alteration of the shell in order to accommodate a retrofit,
- both Gockebay '777 and Thordmark '274 are utterly incapable of providing any interaction with their primary locking mechanical features, and
- Naveda '127 is singularly devoid of any teaching of a cylinder plug and discloses no

primary mechanical locking mechanism as is required by both Gockebay '777 and Thordmark '274,

• Naveda '127 fails to describe how traveling coil 17, armature 18 and latching element 10 of Fig. 7 of Thordmark '274 incorporated into the plug of Gockebay '777.

In contradistinction, Appellant's claims define a structure with an electrical operator borne by the cylinder plug, a member moving in response to the operator, and interaction between the operator and a bar, elongate member or sidebar interposed between the shell and the cylinder plug. Although these differences may appear to be but a small advance in the art, the advantages flowing from these differences are substantial. For example, only Appellant's claims define a structure with an electronic operator borne by the cylinder plug that interacts with a sidebar, elongate member or bar, and that consequently, is able to advantageously both retrofit an installed lock by the expedient of replacing only the cylinder plug *without any* alteration of the shell and to *interact or cooperate with* an existing sidebar of a primary mechanical locking mechanism that is positioned between the shell and plug. The fact that both Gockebay '777 and Thordmark '274 are concerned with retrofitting of existing locks, a fact noted by the Examiner, and that both references require modification of the shell of the lock in order to complete that retrofitting, while Appellant alone provides a cylinder plug that may work with an existing sidebar and may be retrofit without any modification of the shell is a difference between the prior art and the structure defined by the pending claims that prevents the subject matter as a whole from being obviousness under 35 U.S.C. §103. This deficiency in the Examiner's proposed combination is not remedied by Naveda '127. Moreover, this deficiency is highlighted by the fact that Thordmark '274 clearly avoids either

teaching or suggestion of any interaction or cooperation between sidebar 7 and coil 17.

This interaction with an existing sidebar beneficially enhances the security provided by Appellant's lock. Neither Gockebay '777, Thordmark '274 nor Naveda '127, nor the Examiner's proposed combination of Gockebay '777, Thordmark '274 and Naveda '127 are able to provide these advantages. Moreover, the Examiner's proposed combination is incomplete and fails to make a *prima facie* showing of obviousness; how, for example, is the traveling coil 17, armature 18 and latching element 10 of Fig. 7 of Thordmark '274 incorporated into the plug of Gockebay '777? No details of such a combination are provided by the Examiner's proposed combination. Accordingly, in view of these differences between the pending claims and the prior art, "the subject matter as a whole" can not be found to be rendered obvious under 35 U.S.C. §103. In short, the Examiner has unfairly sought to limit the scope of coverage to which Appellant is entitled by reconstructing the art in an effort to meet the terms of Appellant's claims when none of that art suggests such a simple modification of the art as Appellant's electrical operator being both borne by and rotating with the cylinder plug *and* operating to block the travel of a sidebar. Accordingly, reversal of this rejection is required.

#### **Claim 95**

Claim 95 was rejected under 35 U.S.C. §103(a) as rendered obvious by the same proposed combination of Gokcebay '777 and Thordmark '274 . Appellant respectfully traverses this rejection for all the reasons set forth in the foregoing paragraphs.

Additionally, Appellant notes that the Examiner's proposed combination is devoid of such as further patentably distinguishing features as Appellant's "locking mechanism" that is

“interposed between said cylinder plug and said bar.” The absence of a *prima facie* showing of obviousness characterizing the administrative record before the Examiner may be best exhibited by a careful examination of both the references that the Examiner has repeatedly misrepresented in the examination. Neither those references may be said by the Examiner to accomplish in combination, what neither accomplishes alone. Even if by some rogue interpretation of §103 unsupported by either by the Commissioner or 35 U.S.C. §103 the Examiner is able to provide the Appellant’s electrical operator bore by the cylinder plug, the Examiner is not able to demonstrate a locking mechanism that is “interposed between said cylinder plug and said plug.” Appellant questions which noun in the phrase “locking mechanism” is not understood. This clear definition of cooperation between the several elements of Appellant’s claim 95 provides both primary and secondary security, in the manner neither in vision nor suggested by the Examiner’s proposed combination. Accordingly, claim 95 is separately patentably distinguishable and allowable. Reversal of the rejection is required.

#### **Claim 105**

Claim 105 defines a geometric construct between orientation of a side bar travel and a movement of a locking member. In the Examiner’s proposed combination including the two secondary references, this construct can not be met, evidence of a lack of a *prima facie* showing of obviousness. Moreover, incorporation of this construct into the primary reference would impermissibly prevent its solenoid from engaging the shell, thereby defeating its independent locking movement, further evidence of non-obviousness. This rejection should not be sustained.

**Claims 108, 109, 111 And 113 Through 116**

Dependent claims 108, 109, 111 and 113 through 116 were rejected under 35 U.S.C. §103(a) as rendered obvious by the proposed combination of Gokcebay '777 modified according to the Thordmark U.S. 5,542,274 in view of Naveda U.S. 4,416,127. These claims require a bar, or sidebar, “engaging both said shell and said cylinder plug during said rotation.” In contradistinction, the Examiner’s proposed combination modifies the single solenoid of the primary reference with an unknown structure, that necessarily requires a bar, or sidebar, wholly external to the cylinder plug, and which can not engage both the shell and cylinder plug during rotation. Moreover, in the proposed combination including Naveda ‘127, as in Thordmark ‘272, all moving parts, including bars, or sidebars, are wholly external to the cylinder plug. The record before the Examiner is utterly devoid of evidence providing motivation for interposing any of these moving parts between the shell and cylinder plug during rotation; in point of fact, the movable parts of Naveda ‘127 (which teaches a “bolt” type lock, as opposed to a cylinder lock) such as pinion 37, spring 38 and pinion 40, are located in the casemate of the lock, wholly divorce from the key and keyway which would normally characterize a cylinder lock. Which of those parts of Naveda ‘127 would have utility when incorporated into the primary reference is unknown. Equally lacking in Naveda ‘127, as in Thordmark ‘272, is motivation for incorporating any of its parts between the cylinder plug and shell during rotation; the primary reference does not benefit from such a modification. Appellant along, unlike either the primary reference and unlike Naveda ‘127 and Thordmark ‘272, teaches interposition of a bar, or sidebar, which may be advantageously employed in cooperation with a separate locking mechanism. Both the primary reference and



Thordmark '272 teaching auxiliary locking mechanism that are wholly divorced and physically separate from their mechanical locking mechanisms.<sup>555</sup> Consequently, there is no basis for such a modification of the primary reference except an impermissible hindsight reconstruction of the art in the light provided by Appellant alone. The Examiner is therefore, respectfully requested to refuse to sustain this rejection.

### **Claims 119 And 120**

Appellant notes that claim 119 is a copy of claim 1 of Field '307, and that claim 120 is a copy of claim 14 of the Field '307 patent. The several components have been previously identified in the Appellant's earlier filed responses. Appellant further notes that dependent claim 119 is directed to the language on lines 7-18 of column 9, it is copied from claim 1 of Field '307 patent. Consequently, claims 119 and 120 are identical to claims 1 and 14 of Field '307 patent. This language was previously presented within the one year period of time, and the language from claim 1 of Field '307 was removed because it is not believed to be technically accurate. Given the allowance of claims 1 and 14 of Field '307, over the same art now asserted by the Examiner, there is no basis for maintaining this rejection.

### **Claim 121**

Claim 121 defines a structure with "a bar interposed between said shell and said cylinder

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<sup>555</sup> In the language of Thordmark '272, these two locking mechanism are "two or more mutually independent lock functions." Col. 3, lines 8 and 9.

plug detent extending radially from a second recess within said shell into a passage within said cylinder plug to create an obstruction to rotation of said cylinder plug ...” in combination with a “cylinder plug comprising ... an electrical operator borne by said cylinder plug and rotatable with said cylinder plug, said electrical operator being electrically operable to respond to a control signal by moving independently of said detent between one of a first orientation accommodating relative movement between said detent and said cylinder plug and a second and different orientation maintaining obstruction of said relative movement by engaging said detent ... .” In addition to the deficiencies in the record noted in the foregoing several pages of this Brief, the Examiner’s proposed combination is wholly devoid of any structure able to implement Appellant’s “moving independently” without both preventing the primary reference from operating in its intended mode, and disregarding the specific structural teachings of the two secondary references. In other words, the record fails to show either a *prima facie* teaching or obviousness or motivation necessary to construct the Examiner’s proposed combination. The Examiner is therefore urged to refuse to sustain this rejection.

## SUMMARY

**First**, on the issue of enablement to make and use, Appellant has demonstrated an affirmative enablement of a plurality of constituent components of Appellant's locking mechanism, the absence of any disclaimer of any disclaimer or estoppel of Appellant's right to for pending claims 90 and 120 to cover an embodiment which may cover a plurality of those constituent components, and enablement of one of ordinary skill in the art to both make and to use an embodiment which may cover a plurality of those constituent components. The attention of the Board is invited to note that the final Office action makes not allegation of a deficiency in the requirement of §112 for a written disclosure, and instead avers the presence of "subject matter [in the claims] which was not described in the specification in such a way as to enable ... to make and/or use the invention." Appellant respectfully submits that in view of Appellant's disclosure and illustration of multiple embodiments of "electromechanical locking members", the absence of a disavowal of the construction or use of more than one of these "electromechanical locking members", and the guidance provided by the Federal Circuit in application of the first paragraph of §112, in *Epistar Corporation*<sup>556</sup> and in *KCJ Corp.*,<sup>557</sup> Paper No. 20080619 fails to make a *prima facie* showing of a lack of enablement by Appellant's original specification of an embodiment which may cover a plurality of *locking mechanisms*. This rejection should not, therefore, be sustained. Such action is respectfully urged.

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<sup>556</sup> *Epistar Corporation v. International Trade Commission, et al.*, \_\_\_ F.3d \_\_\_, \_\_\_ USPQ 2d. \_\_\_ (Fed. Cir. 22 May 2009);

<sup>557</sup> *KCJ Corp. v. Kinetic Concepts, Inc.* 223 F.3d 1351, 1356 (Fed Cir. 2000), and *AbTox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023 (Fed. Cir. 1997).

There is no evidence of record of an absence of either (i) a lack of enablement the subject matter of claim 90 or 120 of (ii) an absence of a written description the subject matter of claim 90 or 120, or (iii) a failure to disclose the best mode for practicing the subject matter of claim 90 or 120.<sup>558</sup> Under U.S. practice, “the examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an Appellant’s disclosure a description of the invention defined by the claims.”<sup>559</sup> That initial burden has not been met; consequently, in view of the satisfaction of the requirement for enablement of the phrases “distal member”, this rejection may not be sustained under the first paragraph of §112.<sup>560</sup>

**Second**, and turning now to the issue of obviousness-type double-patenting, the Examiner’s conclusion of law premised upon a finding of fact that different nouns in a pending claim refer to a the same constituent component of Appellant’s patent claim, and that consequently claims 1 through 5, 11 through 13, 34, 65 through 69, 75, 92 through 100, 112, 121 are provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1 through 78 of U.S. Patent No. 6,564,601 to Hyatt Jr. is not sustainable on the record before the Board. Appellant observes that not only does the administrative record of this prosecution history fail to demonstrate that the different nouns define the same constituent

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<sup>558</sup> *High Concrete Structures, Inc. v. New Enter. Stone And Lime Co.*, 377 F.3d 1379, 71 USPQ2d 1948, 1951, WL 1689152 (Fed. Cir. 29<sup>th</sup> July 2004).

<sup>559</sup> *MPEP*, 8<sup>th</sup> Ed., Rev. 3 (August 2005) §2163, citing *Wertheim*, 541 F.2d 257, 263, 191 USPQ 90, 97 (CCPA 1976).

<sup>560</sup> Where the meaning of a claim is “reasonably discernable,” the claim is not indefinite. *Bancorp Servs., LLC v Hartford Life Ins. Co.*, 359 F.3d 1367, 69 USPQ2d. 1996 (Fed. Cir. 1<sup>st</sup> March 2004).

components, but also observes that the presence of different nouns in a claim indicates that each noun refers to a different constituent component of that claim.<sup>561</sup>

Under *Geneva Pharmaceuticals, Inc. v. Glaxo SmithKline PLC*, 349 F.3d 1373, 68 USPQ2d 1865 (Fed.Cir. 21<sup>st</sup> November 2003), 35 U.S.C. §121 bars an obviousness-type double patenting rejection when (i) each claim of Appellant '601 patent appeared in the instant application, (ii) the Examiner actually imposed, maintained, and continues to maintain a requirement under 37 CFR §1.146 for an election of species, arguing that no generic claims were allowable, and (iii) Appellant's filed a divisional application was filed to present claims which were indicated by the Examiner to be allowable in the above-captioned application, and those claims were passed to issue in Appellant's '601 patent. This rejection of claims 1 through 5, 11 through 13, 34, 65 through 69, 75, 92 through 100, 112 and 121 may not therefore, be maintained under the doctrine of obviousness type double patenting.

Moreover, where, as here, there is a finding of law that the parent application claimed "two or more independent and distinct inventions," it would be unusual not to have similar terms used throughout the specification and claims. The Examiner has neither made findings of fact that in any of these rejected claims the different words refer to the same constituent elements within that claim, or that any claim of Appellant's '601 patent and any claim of Appellant's the above-captioned application do not stand in a relationship of "two or more independent and distinct

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<sup>561</sup> Nothing in 35 U.S.C. §121, nor in 37 CFR §§1.141-1.146 limits an Appellant's vocabulary in the claims, or the right of an Appellant to use the same term, albeit in different claims, to refer to different constituent components of either different embodiments, or the same embodiment, particularly where there is a difference in scope associated with differences in the connotations in the context in which a term is used.

inventions” which were “claimed in one application” and that one of those “independent and distinct inventions” was “made the subject of a divisional application that complies with the requirements of” 35 U.S.C. §120. Consequently, there is no basis either under 35 U.S.C. §121, or outside of the law as stated by 35 U.S.C. §121, for sustaining this “provisional” rejection under the doctrine of non-statutory obviousness double patenting.

Turning now to the issue of obviousness of claims 25, 26, 28, 30 through 33, 39 through 42, 46 through 52, 54, 56, 64, 70, 76, 77, 85, 90, 91, 105, 108, 109, 111, 113 through 116, 119, 120 and 121 under 35 U.S.C. §103(a) over the Examining staff’s proposed combination of Gockebay ‘777, Thordmark ‘274 and Naveda ‘127, 35 U.S.C. §103 requires consideration of whether the differences between the subject matter defined by each pending claim and the prior art are such that the “subject matter as a whole” would have been obvious? Under U.S. practice, “[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Fritch*, 972 F.2d 1260, 1266, n.14, 23 USPQ2d 1780, 1783-84, n.14 (Fed Cir. 1992), citing *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). It is further established that the Examiner must make specific findings on a suggestion to combine prior art references. *In re Dembiczak*, 175 F.3d 994, 1000-01, 50 USPQ2d 1614, 1617-19 (Fed. Cir. 1999).

As demonstrated the by foregoing paragraphs, the Examiner has focused not on the subject matter of Appellant’s claims as a whole, but has focused upon individual limitations. Ostensibly, the prior art relied upon by the Examiner endeavors to provide a lock that may be easily retrofitted.

Gokcebay '777 however, requires that a bore 50 be drilled within the shell of the existing lock while Thordmark '274 requires that a separate V-shaped groove 3c that is spaced-apart and distinct from the slot for sidebar 7, be machined within the cylinder, and that the entire recess shown in Figure 1 be machined into the shell. Contrary to the Examiner's assertions, neither Naveda '127 nor Thordmark '274 nor Gockebay '777 advocates both insertion of an electrical operator into the cylinder plug and some interaction between that plug borne operator and a bar, elongated member or sidebar that is able to make simultaneous engagement of both the shell and cylinder plug, because:

- Gockebay '777 teaches only insertion of a solenoid within the cylinder,
- Gockebay '777 is wholly devoid of any bar (other than the armature 18 that is itself a part of solenoid 17),
- Gockebay '777 is wholly devoid of any bar that provides any type of engagement between the shell and cylinder,
- Thordmark '274 teaches nothing about insertion of any operator within the cylinder,
- both Gockebay '777 and Thordmark '274 require not only complete replacement of the cylinder, but major alteration of the shell in order to accommodate a retrofit,
- both Gockebay '777 and Thordmark '274 are utterly incapable of providing any interaction with their primary locking mechanical features, and
- Naveda '127 is singularly devoid of any teaching of a cylinder plug and discloses no primary mechanical locking mechanism as is required by both Gockebay '777 and Thordmark '274,

Ⓢ Naveda '127 fails to describe how traveling coil 17, armature 18 and latching element 10 of Fig. 7 of Thordmark '274 incorporated into the plug of Gockebay '777.

Nowhere does the Examiner explain, and the art is silent, how the three parallel rotational members of Naveda '127, each of which requires a unique, spaced-apart axis of rotation, might be viewed to teach “miniaturization” of the single axis compact structures of the proposed combination. Of necessity, Naveda '127 teaches the antithesis of miniaturization asserted by the Examiner.

In contradistinction, Appellant's claims define a structure with an electrical operator borne by the cylinder plug, a member moving in response to the operator, and interaction between the operator and a bar, elongate member or sidebar interposed between the shell and the cylinder plug. Although these differences may appear to be but a small advance in the art, the advantages flowing from these differences are substantial. For example, only Appellant's claims define a structure with an electronic operator borne by the cylinder plug that interacts with a sidebar, elongate member or bar, and that consequently, is able to advantageously both retrofit an installed lock by the expedient of replacing only the cylinder plug *without any* alteration of the shell and to *interact or cooperate with* an existing sidebar of a primary mechanical locking mechanism that is positioned between the shell and plug. The fact that both Gockebay '777 and Thordmark '274 are concerned with retrofitting of existing locks, a fact noted by the Examiner, and that both references require modification of the shell of the lock in order to complete that retrofitting, while Appellant alone provides a cylinder plug that may work with an existing sidebar and may be retrofit without any modification of the shell is a difference between the prior art and the structure defined by the



pending claims that prevents the subject matter as a whole from being obviousness under 35 U.S.C. §103. This deficiency in the Examiner's proposed combination is not remedied by Naveda '127. Moreover, this deficiency is highlighted by the fact that Thordmark '274 clearly avoids either teaching or suggestion of any interaction or cooperation between sidebar 7 and coil 17.

This interaction with the existing sidebar beneficially enhances the security provided by Appellant's lock. Neither Gockebay '777, Thordmark '274 nor Naveda '127, nor the Examiner's proposed combination of Gockebay '777, Thordmark '274 and Naveda '127 are able to provide these advantages. Moreover, the Examiner's proposed combination is incomplete and fails to make a *prima facie* showing of obviousness; how, for example, is the traveling coil 17, armature 18 and latching element 10 of Fig. 7 of Thordmark '274 incorporated into the plug of Gockebay '777? No details of such a combination are provided by the Examiner's proposed combination. Accordingly, in view of these differences between the pending claims and the prior art, "the subject matter as a whole" can not be found to be rendered obvious under 35 U.S.C. §103. In short, the Examiner has unfairly sought to limit the scope of coverage to which Appellant is entitled by reconstructing the art in an effort to meet the terms of Appellant's claims when none of that art suggests such a simple modification of the art as Appellant's electrical operator being both borne by and rotating with the cylinder plug *and* operating to block the travel of a sidebar. Evidence of that error in the formation of the Examiner's proposed combination lies in the fact that the proposed combination is depends upon a primary reference that discloses numerous embodiments of an invention, but none of those several embodiments derive any advantage from the modifications required to construct the Examiner's proposed combination; those modifications

simply produce a more cumbersome structure with more parts that accomplishes nothing that the primary reference does not achieve without those modifications. This is evidence of a lack of motivation in the art to make the modifications necessary to construct the Examiner's proposed combination, as well as evidence that the Examiner is simply using Appellant's claims as a blueprint in an impermissible effort to make a hindsight reconstruction of the art.

Perhaps the proposed combination of Gokcebay 777, Thordmark, *et al.* '274 and Naveda '217 was formed on the reverse side of the "looking glass", out of sight of the intrinsic limitations of the proposed combination, guided only by Appellant's contribution to the art, and without consideration of the pending claims in their entireties:<sup>562</sup>

- By way of example, the Examiner's proposed combination including Gokcebay 777 is not a pioneering patent. Gokcebay '777 itself teaches, at some length, that it is an improvement over Appellant's earlier U.S. Patent No. 5,140,317.<sup>563</sup> Gokcebay '777 however, in seeking to improve upon Mr. Hyatt's, that is, the Appellant's, earlier efforts in the art, places a premium upon extreme compactedness<sup>564</sup> of his electronic access control that is physically irreconcilable with the demands of the secondary references for unrestricted axial length of its "mutually independent lock

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<sup>562</sup> 35 U.S.C. §103(a) mandates consideration of the *subject matter as a whole* in a determination of obviousness. A point-of-novelty test is improper.

<sup>563</sup> Gokcebay, *et al.*, '777, see the entirety of column 2, lines 7 through 54, devoted to an analysis by the Examiner's primary reference, of Appellant's earlier U.S. Patent No. 5,140,317.

<sup>564</sup> Gokcebay, *et al.*, '777, see column 3, lines 1 through 5, as well as column 4, lines 39 through 41.

functions.”<sup>565</sup> The primary reference, in his efforts to follow the teachings of Appellant, concentrates his structure within his cylinder plug 24 to offer a structure “in an extremely compact fashion”<sup>566</sup> for which “[n]o additional space is required to implement the system of the invention.”<sup>567</sup> The Examiner’s proposed combination however, as represented by Thordmark, *et al.* ‘274 and Naveda ‘217, dwells wholly outside the cylinder plug and demands,

“a latching element 10 [the configuration of which] can vary within wide limits ... [and] its length may vary but preferably it exceeds half the axial length of the plug and may – as in the illustrated embodiments — often substantially correspond to the axial length of the plug.”<sup>568</sup>

This disharmony, attributable to both the radial versus axial orientation in the primary and secondary references, as well as to the gross differences in size relative

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<sup>565</sup> Thordmark, *et al.* ‘274, column 2, lines 66 and 67, and column 3, line 9.

<sup>566</sup> Gokcebay, *et al.*, ‘777, see column 4, line 39.

<sup>567</sup> Gokcebay, *et al.*, ‘777, see column 4, lines 41, 42. As taught by the primary reference, his lock “has an electronic access feature which occupies no more sapce than the mechanical lock itself. **Nothing** is required outside the lock cylinder ... **aside from** a small recess or bore [*i.e.*, bore 50] which is provided in the cylinder shell.” Gokcebay, *et al.*, ‘777, see column 3, lines 1 through 5.

<sup>568</sup> Thordmark, *et al.* ‘274, see column 6, lines 18 through 25, together with column 4, lines 20 through 23.

to the cylinder plug in the primary and secondary references, and to the insistence of the primary reference that “[n]othing is required outside the lock cylinder”<sup>569</sup> versus the demand of the secondary references that all moving parts be required to be on the outside of the lock cylinder, is irreconcilable, and impermissibly prevents the primary reference from being practiced in its intended mode of operation, contrary to the practice under 35 U.S.C. §103(a). Consequently, the primary reference may not be modified according to the teachings of the secondary references.

- By way of a second example, Gokcebay ‘777 dwells upon direct engagement between the cylinder plug and its surrounding shell in an effort to provide, “in an extremely compact fashion, electronic access control to a conventional mechanical lock”<sup>570</sup> with “a bore or recess 50 [cut into cylinder shell 46] into which the blocking pin 38 extends in the blocking position.”<sup>571</sup> In the Examiner’s proposed combination including Thordmark, *et al.* ‘274, the entirety of “latching element 10” having a certain axial length, “coacts with a blocking element” 11 which is “conveniently moved axially bay means of an electric motor, an electromagnet, a solenoid ...” is encased within “a lock cylinder 2”, to indirectly engage “plug 3”; this entirety is taught by the Examiner’s proposed combination to be one of two, or

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<sup>569</sup> Gokcebay *et al.* ‘777, see column 3, lines 2 and 3.

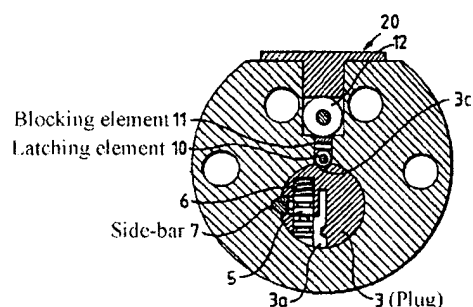
<sup>570</sup> Gokcebay, *et al.*, ‘777, see column 4, lines 39 and 40.

<sup>571</sup> Gokcebay, *et al.*, ‘777 see column 6, lines 45 through 48.

more, “**mutually independent** latching or blocking devices.”<sup>572</sup>

Thordmark et al. U.S. Patent No. 5542274

Figure 3



Completely absent from the Examiner’s proposed combination is any direct locking, or latching, or blocking function achieved between “lock cylinder 2” and “plug 3” with the direct engagement taught by the primary reference, because the proposed combination teaches that its electrically activated latching or blocking device is devoid of either structural or functional relation to “side-bar 7.”

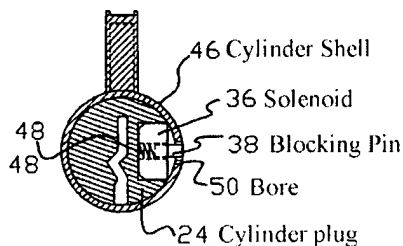
This divergence by the secondary references from the teaching by the primary reference of a solenoid to achieve direct engagement between the cylinder plug 24 and bore 50 in the surrounding cylinder shell 46,

<sup>572</sup>

Thordmark, *et al.* ‘274, column 2, lines 66 and 67, and column 3, lines 8 through 10.

Gokcebay et al. U.S. Patent No. 5552777

Figure 5



in addition to irreconcilability between the teachings of the primary reference on “extremely compact fashion” and the demand by the secondary references in the proposed combination for a latching element 10 of a certain axial length, deprives the prior art of all evidence of motivation for making the Examiner’s proposed combination. The various teachings of the several component references in the Examiner’s proposed combination are irreconcilable on the features defined by the finally rejected claims.<sup>573</sup> Although the prior art may contain all of the constituent parts of the

<sup>573</sup>

**Claim 46:** “said cylinder plug comprising ... an electrical operator ... obstructing movement of said bar ... .”

**Claim 56:** “an elongate member interposed between said shell and said plug to travel ... said plug comprising ... an electrical operator ... obstructing said travel ... .”

**Claim 64:** “a sidebar interposed between said shell and said cylinder plug to travel ... an electrical operator borne by said cylinder plug ... providing obstruction of said travel ... .”

**Claim 70:** “a bar interposed between said shell and said cylinder plug to travel ... an electrical operator borne by said cylinder plug ... providing obstruction of said travel ... .”

**Claim 76:** “an elongate bar ... interposed between said shell and said cylinder plug to travel ... an electrical operator borne by said cylinder plug ... providing obstruction of said travel... .”

**Claim 77:** “an elongate bar ... interposed between said shell and said cylinder plug to travel ... an electrical operator borne by said cylinder plug ... providing obstruction of said travel ... .”

**Claim 85:** “a side bar cooperating between the shell and the barrel ... at least one electromechanical locking member is disposed within the barrel ... an electronically

rejected claims, not only is that art devoid of motivation to combine those parts in the manner defined by these claims to cooperate in the relationships set forth by these claims, but the teachings of that art are irreconcilable on the precise points of mutual independence of lock functions, compactedness and direct, versus indirect, engagement between the lock cylinder 2 and plug 3, where that art differs between the pending claims. In view of such advantageous results flowing from these differences such as Appellant's preservation of compactedness and enabling retrofitting without a need to cut a bore 50<sup>574</sup> into the shell in the manner required by the primary reference, these rejections may not be sustained under 35 U.S.C. §103(a).

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powered drive mechanism located within the barrel and cooperating with the electromechanical locking member to selectively move the locking member ... in which the side bar moves ... .”

**Claim 89:** “an elongate ... barrel member ... containing an electromechanical locking member ... disposed in the recess of the barrel member ... an electronically powered drive mechanism located within the barrel member for moving the electromechanical locking member ... .”

**Claim 90:** “providing an electronically powered rotatable barrel ... including: at least one electromechanical locking member disposed in the barrel ... positionable to permit the side bar to engage the locking member ... .”

**Claim 91:** “a bar interposed between said shell and said cylinder plug to reciprocate ... a locking mechanism borne by said cylinder plug ... hindering said reciprocation ... and an electrical operator borne by said cylinder plug ... providing obstruction of said reciprocation by said bar ... .”

**Claim 120:** “an elongated ... barrel member ... containing a plurality of electromechanical locking members ..., each of the locking members including a groove ... [and] an electronically powered drive mechanism located within the barrel member for moving the electromechanical locking members to a position in which the grooves of the locking members are aligned.”

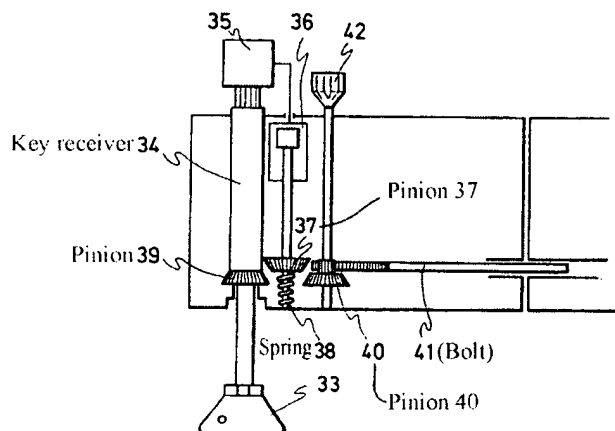
**Claim 121:** “a bar interposed between said shell and said cylinder plug detent extending radially from a second recess within said shell ...; said cylinder plug comprising ... and electrical operator borne by said cylinder plug ... moving ... between ... a second and different orientation maintaining obstruction of said relative movement by engaging said detent ... .”

<sup>574</sup>

Gokcebay, *et al.*, ‘777 see column 6, lines 45 through 48.

- By way of further example, the Examining Staff makes much of the teaching in the Examiner's proposed combination including Naveda '127 in the proposed combination,

Naveda U.S. Patent No. 4416127  
Figure 10



despite the fact that all, and every single one of the moving parts of Naveda '127, namely pinion 39, pinion 37, spring 38, pinion 40, bolt 41, and the various unnumbered shafts, are all located wholly outside the circumference of key receiver 34,<sup>575</sup> unlike the structure defined by the pending claims.<sup>576</sup> At issue before the

<sup>575</sup> See Figure 10, of Naveda '127.

<sup>576</sup> **Claim 46:** "a bar borne by said plug ... said cylinder plug comprising: ... an electrical operator... ."  
**Claim 56:** "an elongate member interposed between said shell and said plug to travel ... said plug comprising ... an electrical operator ... ."  
**Claim 64:** "a sidebar interposed between said shell and said cylinder plug to travel ...; and an electrical operator borne by said cylinder plug ... ."  
**Claim 70:** "a bar interposed between said shell and said cylinder plug to travel ... an electrical operator borne by said cylinder plug ... ."  
**Claim 76:** "an elongate bar ... interposed between said shell and said cylinder plug to



Examiner is what evidence of record provides motivation for incorporating the moving parts found on the exteriors of the structures in the secondary references into the interior of the cylinder plug? The primary reference itself, which limits “an electronic access feature ... [to occupancy of] no more space than the mechanical lock itself,”<sup>577</sup> may not be read to provide that motivation.

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travel ... an electrical operator borne by said cylinder plug ... .”

**Claim 77:** “an elongate bar ... interposed between said shell and said cylinder plug to travel ... an electrical operator borne by said cylinder plug ... providing obstruction of said travel ... .”

**Claim 85:** “a side bar cooperating between the shell and the barrel ... at least one electromechanical locking member is disposed within the barrel ... an electronically powered drive mechanism located within the barrel and cooperating with the electromechanical locking member to selectively move the locking member ... in which the side bar moves ... .”

**Claim 89:** “an elongate ... barrel member ... containing an electromechanical locking member ... disposed in the recess of the barrel member ... an electronically powered drive mechanism located within the barrel member for moving the electromechanical locking member ... .”

**Claim 90:** “providing an electronically powered rotatable barrel ... including: at least one electromechanical locking member disposed in the barrel ... positionable to permit the side bar to engage the locking member ... .”

**Claim 91:** “a bar interposed between said shell and said cylinder plug to reciprocate ... a locking mechanism borne by said cylinder plug ... hindering said reciprocation ... and an electrical operator borne by said cylinder plug ... providing obstruction of said reciprocation by said bar ... .”

**Claim 120:** “an elongated ... barrel member ... containing a plurality of electromechanical locking members ..., each of the locking members including a groove ... [and] an electronically powered drive mechanism located within the barrel member for moving the electromechanical locking members to a position in which the grooves of the locking members are aligned.”

**Claim 121:** “a bar interposed between said shell and said cylinder plug detent extending radially from a second recess within said shell ...; said cylinder plug comprising ... and electrical operator borne by said cylinder plug ... moving ... between ... a second and different orientation maintaining obstruction of said relative movement by engaging said detent ... .”

<sup>577</sup> Gokcebay, *et al.*, ‘777 see column 3, lines 1 through 6, together with column 2, lines 53 and 54, column 4, lines 40 through 43, and column 10, lines 10 through 15.

Turning now to consideration of exemplars of deficiencies of the evidence in the administrative record before the Examiner which were noted earlier in the paper, these deficiencies in the evidence must be considered under the criterion set forth by the Court in *In re Sang-Su Lee*, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002):<sup>578</sup>

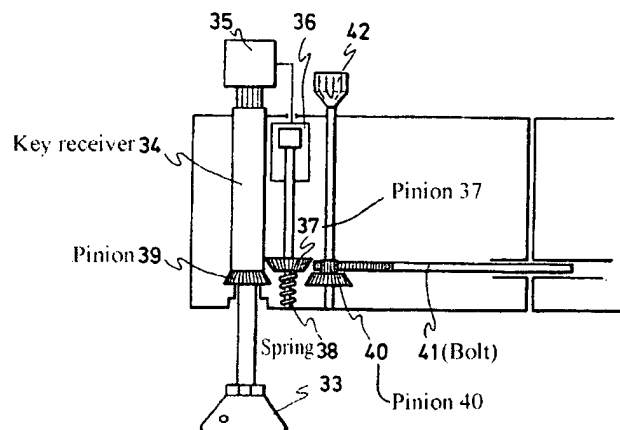
- By way of an additional example, the Examining Staff has sought to find motivation to incorporate the Thordmark, *et al.* '274 and Naveda '217 references into the structure of Gokcebay '777, despite the fact that Gokcebay '777, in teaching his improvements over Appellant's '317 patent, twice teaches against a structure such as that of Naveda '217 where the lock's system "would take up space within the ... lock casing adjacent to the lock."<sup>579</sup> Despite this caution by the primary reference against structures such as that taught by Naveda '217, and despite the fact that all of the movable parts of Naveda '217 are in fact, located entirely within the lock's casing,

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<sup>578</sup> "Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the teaching or suggestion to combine prior art references. ... The need for specificity pervades this authority." *In re Sang-Su Lee*, 61 U.S.P.Q.2d @1433 (Fed. Cir. 2002).

<sup>579</sup> See Gokcebay, *et al.*, '777, at col. 2, lines 39-40 ("the system of the patent [referring to Appellant's earlier '317 patent] requires additional hardware within the lock casing ...") and col. 2, lines 52-54 ("which avoids the need for electronics, solenoids or other hardware which would *take up space within the ... lock casing adjacent to the lock*").

Naveda U.S. Patent No. 4416127  
Figure 10



the Examining Staff seems convinced that Naveda '217 teaches the proposition that movable parts such as that taught by Thordmark, *et al.* '274 which are **also wholly external** to the cylinder plug, should be incorporated into the cylinder plug in the manner taught by Appellant's claims 120 and 121.<sup>580</sup> The fact that the sole motivation for such a construction is found in Appellant's claims, is convincing indicia of obviousness *vel non*.

- By way of a second additional example, the Examining Staff has ignored the complete absence from the art of any motivation provided by either Thordmark, *et al.* '274 or Naveda '217, or by Thordmark, *et al.* '274 and Naveda '217 in

<sup>580</sup>

**Claim 56:** "an electrical operator ... obstructing said travel and relative operable movement between said shell and said plug *while* said electrical operator is *contained wholly within said plug* ... ." In contradistinction the armature (*i.e.*, "block pin 38") of the primary reference would lack utility if its electrical operator was *wholly within said plug* during its locking situation, because the distal end of that electrical operator must extend completely through and beyond the cylinder plug and into bore 50 within the shell. See Gokcebay, *et al.*, '777, at column 6, lines 45 and 46.

combination, to incorporate into the cylinder plug of the Examiner's proposed combination any constituent component other than the solenoid taught by the primary reference, and therefore lacks appellant's cooperation between an electrical operator borne by the cylinder plug and cooperating with a bar.

- By way of a third further example, the Examiner's proposed combination including Gokcebay '777 teaches that the embodiment illustrated in Figures 3, 4 and 5 "allows for secondary locking 'high security' mechanical features,"<sup>581</sup> but is utterly devoid of any teaching or suggestion for structural or functional cooperation between these "secondary locking 'high security' mechanical features" and his "conventional lock cylinder 20", while Thordmark, *et al.* '274 teaches "locks which include two or more **mutually independent** latching or blocking devices, of which one can be activated electrically"<sup>582</sup> and "a lock of the kind ... which has two or more **mutually independent** lock functions",<sup>583</sup> and Nevada '127 teaches but a single magnetic lock. Only Appellant's claims 46, 56 and 64, which when integrated into a conventional locking mechanism, advantageously both (i) recognize the innate deficiencies in locking structure devoted to preserving the mutually independency (as well as the secondariness of Gokcebay '777's

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<sup>581</sup> Gokcebay, *et al.*, '777, column 6, lines 54 and 55.

<sup>582</sup> Thordmark, *et al.* '274, column 2, line 66 through column 3, line 1.

<sup>583</sup> Thordmark, *et al.* '274, column 3, line 9.

“secondary locking”<sup>584</sup> of the lock functions in the prior art and (ii) provide “latching or blocking devices, of which one can be activated electrically”<sup>585</sup> and, unlike the prior art, may be integrated to cooperate in reinforcing the locking function of both locking mechanisms,<sup>586</sup> or alternatively, be selectively controlled to allow the mutual independency of the prior art.

- By way of a fourth example, the embodiment of Figures 3, 4 and 5 of the primary reference in the proposed combination teaches “a bore or recess 50 into which the blocking pin 38 extends in the blocking position.”<sup>587</sup> Incorporation of any component of the secondary references into the primary reference impermissibly destroys the ability of the primary reference to operate in its intended mode of operation with “bore or recess 50 into which the blocking pin 38 extends,”<sup>588</sup> because such an incorporation would inherently block bore 50. This inconsistency

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<sup>584</sup> Gokcebay, *et al.*, ‘777, column 6, line 54.

<sup>585</sup> Thordmark, *et al.* ‘274, column 2, line 66 through column 3, line 1.

<sup>586</sup> It is not customary in U.S. practice to define the advantages that result from a novel structure, such as those advantages provided by a structure such as Appellant’s that flow from positioning an electrical operator to interact with a bar, detent or sidebar; the language of **Claim 64** expressly encompass such a structure and is worded to read: “said sidebar having a first portion that is positioned to be optionally block by another component of said lock functioning independently of said electrical operator to prevent said travel by said sidebar, and a second portion that is positioned to be blocked from said travel by said sidebar to said second position whenever said electrical operator is within said first orientation ... .”

<sup>587</sup> Gokcebay, *et al.*, ‘777, column 6, lines 44 and 46.

<sup>588</sup> Gokcebay, *et al.*, ‘777, column 6, lines 44 and 46.

is further evidence of non-obviousness.

- By way of a fifth example, incorporation of any component of the secondary references into the embodiment of Figures 3, 4 and 5 of the primary reference in the proposed combination which teaches “a bore or recess 50 into which the blocking pin 38 extends in the blocking position”<sup>589</sup> is a distortion of the teachings of the primary references because Thordmark, *et al.* ‘274 already teaches “a lock cylinder 2 which accommodates a plug 3 ... [and] a side-bar 7 [which] is able to move radially inward in the plug, so as to enable the plug to be rotated”<sup>590</sup>, and preserves that “side bar 7” entirely **mutually independent**<sup>591</sup> from the operation of “latching element 10”, “blocking element 11”, “electric motor 12” and “electromagnet 17”, unlike the structure defined by the pending claims.<sup>592</sup>

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<sup>589</sup> Gokcebay, *et al.*, ‘777, column 6, lines 44 and 46.

<sup>590</sup> Thordmark, *et al.* ‘274, column 4, lines 57-66.

<sup>591</sup> Thordmark, *et al.* ‘274, column 2, line 67, and column 3, line 9.

<sup>592</sup> **Claim 46:** “said cylinder plug comprising ... an electrical operator ... obstructing movement of said bar ... .”

**Claim 56:** “an elongate member interposed between said shell and said plug to travel ... said plug comprising ... an electrical operator ... obstructing said travel ... .”

**Claim 64:** “a sidebar interposed between said shell and said cylinder plug to travel ... an electrical operator borne by said cylinder plug ... providing obstruction of said travel ... .”

**Claim 70:** “a bar interposed between said shell and said cylinder plug to travel ... an electrical operator borne by said cylinder plug ... providing obstruction of said travel ... .”

**Claim 76:** “an elongate bar ... interposed between said shell and said cylinder plug to travel ... an electrical operator borne by said cylinder plug ... providing obstruction of said travel... .”

**Claim 77:** “an elongate bar ... interposed between said shell and said cylinder plug to

- By way of a sixth example, the Examiner's proposed combination relies entirely upon electrically energy to move external blocking pin 38 of Gokcebay, *et al.*, '777, to move external blocking element 11 of Thordmark, *et al.*, '274 and to move external pinion 37 of Naveda '127. In contradistinction, Appellant relies is able to use the "torque that is externally applied to said plug and causes rotation of said plug within said shell."<sup>593</sup> There is no evidence of motivation present in the record

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travel ... an electrical operator borne by said cylinder plug ... providing obstruction of said travel ... ."

**Claim 85:** "a side bar cooperating between the shell and the barrel ... at least one electromechanical locking member is disposed within the barrel ... an electronically powered drive mechanism located within the barrel and cooperating with the electromechanical locking member to selectively move the locking member ... in which the side bar moves ... ."

**Claim 89:** "an elongate ... barrel member ... containing an electromechanical locking member ... disposed in the recess of the barrel member ... an electronically powered drive mechanism located within the barrel member for moving the electromechanical locking member ... ."

**Claim 90:** "providing an electronically powered rotatable barrel ... including: at least one electromechanical locking member disposed in the barrel ... positionable to permit the side bar to engage the locking member ... ."

**Claim 91:** "a bar interposed between said shell and said cylinder plug to reciprocate ... a locking mechanism borne by said cylinder plug ... hindering said reciprocation ... and an electrical operator borne by said cylinder plug ... providing obstruction of said reciprocation by said bar ... ."

**Claim 120:** "an elongated ... barrel member ... containing a plurality of electromechanical locking members ..., each of the locking members including a groove ... [and] an electronically powered drive mechanism located within the barrel member for moving the electromechanical locking members to a position in which the grooves of the locking members are aligned."

**Claim 121:** "a bar interposed between said shell and said cylinder plug detent extending radially from a second recess within said shell ...; said cylinder plug comprising ... and electrical operator borne by said cylinder plug ... moving ... between ... a second and different orientation maintaining obstruction of said relative movement by engaging said detent ... ."

<sup>593</sup>

**Claim 56**, lines 6-9.

before the Examiner to modify the primary reference to rely upon externally applied torque to remove “blocking pin 38” from bore 50.

Consequently, there is no basis in the record for sustaining the final rejection of claims 46, 56, 64, 70, 76, 77, 90, 91, 120 or 121.

The Board is invited to consider that the Examining Staff relies upon Thordmark ‘247 to modify the primary reference with its teaching of “the electrically actuated blocking element be mounted in the cylinder shell and not in the plug”<sup>594</sup>; the Examining Staff expressly acknowledges that “Gokcebay recognizes the existence of electrode-mechanical locks having the blocking tumbler mounted in the cylinder casing like Thordmark et al. Indeed, evidence exhibits 1 and 2 list seventeen references cited by Gokcebay ‘777 and an additional five European and Swiss references cited by Thordmark ‘247, which overwhelmingly demonstrate that it was extremely common in the art for several decades to teach (1) the use of side bars, detents and blocking elements within a recess between a cylinder plug and a cylinder shell and (2) the positioning of an “electrically actuated blocking element being mounted in the cylinder shell and not the plug”<sup>595</sup>

The earliest of these references, Peters, U.S. Patent No. 3,241,344 clearly demonstrates the combination of a “side bars 20”, which Peters ‘344 describes at column 2, lines 14, 15, as being conventional and described by U.S. Patent No. 2,040,762 issued on 23 August 1960 to T. H. Johnstone, for its retracting sidebar type cylinder lock, in combination with a “solenoid 38” secured “by screws to casing 36 and operatively associated with shell 34 so that the shell provides

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<sup>594</sup> Examiner’s Answer, page 17.

<sup>595</sup> Examiner’s Answer, page 17.



an armature operable when the solenoid is energized to move member 30 outward to an unlocked position of blocking relation with extended sidebar 20. A coil compression spring 40 seats between the wall of the solenoid and shoulder 44 of member 30 to bias the member into its locking or blocking position.”<sup>596</sup> This alone serves as a un rebuttable evidence that a person of ordinary skill in the art such as the inventor of the primary reference, was very familiar with the ability of a solenoid to interact with a detent, but did not appreciate the advancement of retrofitting while minimizing cost as well as the manufacturing steps of the retrofitting by incorporating a detent or sidebar into his invention as disclosed in Gockebay ‘777. This admission is further demonstration of the non-obviousness of the pending claims at the very of point of novelty where Appellant departed from the art, in the same manner as was found by the *Corp Eibel Process Machinery v. Minnesota Manufacturing*, 261 U.S. 45 (1923).

In *Eibel Process*, claims 1<sup>597</sup> through 3, 7, 8 and 12 before the Court defined a “Fourdrinier machine” which “has for many years been well known and most widely used for making news print paper. ... These machines are very large, some of them weighing more than 1,000,000 pounds ... . Speed, which increases production, is therefore of the highest importance.” In a Fourdrinier machine, a continuous stream of papermaking stock of fibers of wood pulp mixed from 135 to 200 times their weight of water of the consistency and fluidity of diluted milk, is discharged from a

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<sup>596</sup> Peters ‘344, column 2, lines 40-48.

<sup>597</sup> Claim 1, by way of example, read “A Fourdrinier machine, ahving the breast roll end of the paper-making wire maintained at *a substantial elevation above* the level, whereby the stock is caused to travel by gravity, rapidly in the direction of movement of the wire, at a speed approximately equal to the speed of the wire, substantially as described.” Other claims were shorter in text and broader in scope.

flow box or pond, at what is called the “breast roll” at one end of the machine, onto a moving sieve known as “wire” of about 70 feet in length and often more than 100 inches in width, with a working length of about 30 feet. The process is stimulated to shake the wire.

The evidence before the Court established that before Eibel entered the field, continued high speeds in the wire of the Fourdrinier machine much beyond 500 feet a minute resulted in the production of defective paper. “What Eibel tried to do was to enable the paper maker to go to 600 or 700 feet and above in speed and retain a good product.”<sup>598</sup> Eibel accomplished this by raising “the pitch of the wire from 2 or 3 inches to 12 inches, and greatly increased the speed, with a satisfactory product, and in that month he applied for a patent.”<sup>599</sup> According to the Court, Eibel’s modification spread throughout the papermaking industry “like wildfire.”<sup>600</sup> Moreover, there “were those who hesitated to take the venturesome step to give such an unheard-of-pitch to the wire, and waited until others assumed the risk ... .”<sup>601</sup>

The issue before the Court in *Eibel Process* was “first and foremost ... whether this was a real discovery of merit”?<sup>602</sup> The Court held Eibel’s claims to be valid and infringed.

References such as Figure 1 of the Clarkson, U.S. Patent No. 4,712,398, serve as evidence

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<sup>598</sup> *Eibel Process*, 261 U.S. @ 54.

<sup>599</sup> *Eibel Process*, 261 U.S. @ 45.

<sup>600</sup> *Eibel Process*, 261 U.S. @ 45.

<sup>601</sup> *Eibel Process*, 261 U.S. @ 45.

<sup>602</sup> *Eibel Process*, 261 U.S. @ 52.

of the state of the art such as was carefully developed by the Court in *Eibel Process*;<sup>603</sup> Clarkson '398 is an additional reference evidencing the incorporation of a solenoid, denominated as release assembly 70, and its "laterally oriented locking pin 72" extending from the cylinder shell into "cylinder plug 55."<sup>604</sup> These features are further described in the later issued Clarkson, U.S. Patent No. 4,789,859 and are illustrated in detail in Figures 2, 6A through 7 thereof. The Vaden Hans-Dieter, European Patent Publication No. 0303849 B1 reference published in February 1989, further demonstrates the knowledge in the art of a "built-in solenoid (11)" mounted with the cylinder housing 1 to engage cylinder core 3. The Kruhn Jurgen, European Patent Publication No. 0281507 A3 published in September 1998 also demonstrates "an electro magnet (13) arranged in the cylinder housing (12), while the Von Lanthen Mao, PCT Publication No. 805853 A1 published during August 1988 illustrates an electro mechanical cylinder lock with an electric coil 11 and magnet bolt 12 serving as part of a blocking device 6 which, through release ball 12 and holding pin 15, engages rotor 5 of the lock.

Klein Haeny Arno, PCT Publication No. 8204459 A1 published during December 1985, additionally illustrates "a magnetic bolt [which] has a movable an electro magnetically operable locking member which, in conjunction with the locking part arranged on the rotor of a lock cylinder, blocks and releases the rotor, independent of the mechanical tumblers ... ." In summary, all of these references illustrate a certain consistency with the teachings of the secondary reference,

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<sup>603</sup> In *Eibel Process*, the Court turned to references such as "a patent granted to Barrett and Horne ... in 1899, and other exemplars of the art to shown that "the pitch of the wire in it could not have exceeded 3 inches ... ."

<sup>604</sup> Clarkson '398, column 4, lines 62-69.

and emphasize the deficiencies in the Examiner's proposed combination; only Appellant's claims define a cooperation between electrical operator borne by the core, or plug of a cylinder lock and a detent, or sidebar. The effort by the Examining Staff to disassemble solenoid 35 of the primary reference into its several constituent parts<sup>605</sup> in a effort to reconstruct Appellant's claims ignores the fact that absent its armature 38, solenoid 35 is simply a coil unable to meet the movement defined by Appellant's claims is a misguided effort to ignore the "differences between the subject matter" defined by the claims and the prior art as is required by 35 U.S.C. §103(a), and an inexcusable failure by the Examining staff to comply with the mandate of 35 U.S.C. §103(a) to consider the subject matter of Appellant's claims "as a whole." The assertions by the Examining Staff that the secondary references remedy the deficiencies in the primary reference<sup>606</sup> ignores the fact that the secondary references such as Thordmark '274 are nothing more than a single reference selected from among the plethora of references discussed by both Gokcebay '777 and Thordmark

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<sup>605</sup> "Gokcebay teaches all of the elements of the claimed invention including a cylinder shell 20, plug/barrel 24, elongate members (conventional pin tumblers in bores 52-col.6, lines 61-62), a key engaging surface provided in the keyway and in the housing contact/conductor 28 in Fig.3, a radially oriented aperture which houses a solenoid/electrical operator 36 with a spring biased (48) movable member comprising a bar/detent/blocking pin 38, and electronic logic circuit (fig. 2, col. 5, line 56 to col. 6, line 37)." *Examiner's Answer*, page 17.

<sup>606</sup> "The difference between the claimed invention and Gokcebay is Gokcebay fails to teach a bar/detent/blocking pin being engaged by a locking member which moves independently of the movement of the bar/detent which is reciprocated between a blocking and releasing position as a result of independent movement of the locking member via the electrical operator. Thordmark et al teach a cylinder having an electronic operator 12, a movable electronic locking member 11 which alternately allows and blocks reciprocation of a spring biased sidebar/detent 10 (col. 5, lines 38-47). Thordmark et al teach the electrically actuated blocking element being mounted in the cylinder shell and not the plug." *Examiner's Answer*, page 17.

'274 from among numerous others, which teach a solenoid mounted in a cylinder shell, or casing, to act upon a sidebar. Both Gokcebay '777 and Thordmark '274 were well acquainted with such art, and in point of fact, openly discussed such art in specifications. The fact is that the teachings of Gokcebay '777 can not accommodate a sidebar between the armature 38 of his solenoid 35 and his recess 50 without compromising the integrity of his lock. Consequently, the proposition advanced by the Examining Staff that a "reversal of parts and size" is obvious,<sup>607</sup> is unwarranted by the evidence of record. The reliance upon Nevada by the Examining Staff is misplaced; the citations of Nevada '127 to "miniaturization" are invitations by Nevada '127 to invent, and are directed to features such as the key,<sup>608</sup> rather than to the cylinder plug of Appellant's claims.<sup>609</sup>

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<sup>607</sup> "It would have further been an obvious reversal of parts and change of size to select miniature logic circuitry and a miniature solenoid and locking member 11 such that the blocking mechanism fits within a conventional sized lock plug as taught by Gokcebay and Nevada. " *Examiner's Answer*, pages 18 and 19.

<sup>608</sup> See, for example, Nevada '127 at column 4, lines 58-61, and column 9, lines 22-26 cited by the Examining Staff. Neither "miniaturization" nor the body of the key are defined by the pending claims, and for the issues before the Board, are not relevant to the proposed modification of the primary reference. This style by the Examining Staff is not helpful to completion of this compacted examination.

<sup>609</sup> "Naveda is applied to reinforce that one having ordinary skill in the art of electro-mechanical or magneto-electric lock systems would have known of the versatility and interchangeability of known electronic elements usable in verifying and actuating electric lock cylinders including among others, miniature coils, miniature electromagnets, electronic memories bioelectric circuits, resistance plates and the like (col. 3, line 1-13 and col. 4, lines 30-35). Furthermore, Nevada teaches that the electromagnet can be located in the receiver, or alternately, in the body of the key having any size or shape (col. 4, line 60, col. 9, lines 22-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the simple blocking element of Gokcebay with the multi-part (detent 10 and locking member 11 therefor) electrically actuated blocking element of Thordmark et al to thwart natural attempts to force system locks that are equipped with electronic blocking functions, of the kind meant by Thordmark (col. 1, lines 38-42), by making forcing of such locks more difficult." *Examiner's Answer*, pages 18 and 19.

Moreover, the single fact that it was the single pioneer recognized by Gokcebay '777 who along departed from the industry convention of the cylinder lock industry as evidence by the numerous references of record, is dispositive evidence of the non-obviousness of the pending claims.

Moreover, an improvement made in such a very crowded and ancient art is further evidence of non-obviousness. Reversal of this rejection and allowance of claims 46 through 52, 54, 56, 64, 70, 76, 77, 85, 90, 91, 105, 108, 109, 111, 113 through 116, 119, 120 and 121 is respectfully urged.

Such action is respectfully requested.

In view of the law and facts stated herein as well as all the foregoing reasons, reversal of the rejections and allowance of all pending claims are urged.

Respectfully submitted,

  
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## VIII. CLAIMS APPENDIX

### Claims on Appeal

(1-26, 28, 30-42, 46-52, 54-56, 64-70, 75-77, 82-84, 90-93, 95-100, 105-116 and 119-121)

1. (previously presented) A plug, comprising:

a first base bearing a keyway providing a first electrical conductor and an orifice spaced-apart from and separated by a mass of said plug from said keyway;

a second base separated by an axial length of said plug from said first base, said second base disposed to support a cam, said mass being perforated by a plurality of radially oriented apertures forming an array;

an exterior surface extending between and engaging said first base and said second base;

a sidebar positioned between said first base and said second base to reciprocate between a first location with said sidebar simultaneously engaging said plug and a cylinder surrounding said plug, and a second location releasing said plug for relative to movement between the cylinder and said plug;

a locking mechanism disposed within said apertures to move relative to said plug in response to a key inserted into said keyway to accommodate reciprocation of said sidebar relative to said plug and rotation of said plug relative to the cylinder when the key while inserted into said keyway engages in a selected relation with said locking mechanism, and obstructing said reciprocation absent said selected relation;

a second electrical conductor terminating with an electrical contact exposed to an exterior of said first base through said orifice;

an electronic logic circuit borne by said plug while coupled to receive electrical data signals via said first and second electrical conductors, and generating control signals in dependence upon said electrical power and data signals; and

an electrical operator disposed within one of said apertures, said operator having a distal member travelling in dependence upon said control signals between a first position relative

25 to said exterior surface obstructing said relative movement by engaging a detent protruding from  
26 the cylinder, and a second and different position relative to said exterior surface accommodating  
27 said relative movement.

1 2. (previously presented) The plug of claim 1, comprising said locking mechanism, logic  
2 circuit and electrical operator simultaneously experiencing said rotation relative to the cylinder  
3 whenever said plug rotates relative to the cylinder.

1 3. (previously presented) The plug of claim 1, comprising said locking mechanism, logic  
2 circuit and electrical operator being wholly within the cylinder and travelling with said plug  
3 whenever said plug moves relative to the cylinder.

1 4. (previously presented) The plug of claim 1, with said electrical operator maintaining said  
2 distal member within said plug with said distal member extended not beyond said exterior surface  
3 while said distal member is in said first position, and maintaining said distal member in concurrent  
4 engagement with said plug and with the detent while said distal member is in said first position.

1 5. (previously presented) The plug of claim 1, with said electrical operator maintaining said  
2 distal member within said plug with said distal member extending not beyond said exterior surface  
3 while said distal member is in said first position, and moving said distal member radially between  
4 relative to said exterior surface in dependence upon said control signals.

1 6. (previously presented) A lock, comprising:  
2 a cylinder containing a hollow recess defining a longitudinal axis and a stationary  
3 detent extending from said cylinder;  
4 a plug bearing a plurality of open radially oriented apertures forming an array, said  
5 plug being rotatable around said longitudinal axis while resident within said hollow recess, said  
6 plug comprising:



7 a first base bearing a keyway providing a first electrical conductor and an  
8 orifice spaced-apart from and separated by a mass of said plug from said keyway;

9 a second base separated by an axial length of said plug from said first base,  
10 said second base disposed to support a cam;

11 an exterior surface extending between and engaging said first base and said  
12 second base;

13 a sidebar positioned between said first base and said second base to create an  
14 obstruction to relative movement between said cylinder and said plug;

15 a locking means disposed within said apertures to release an obstruction when the  
16 key while inserted into said keyway engages in a selected relation with said locking means, and  
17 to maintain said obstruction absent said selected relation;

18 a second electrical conductor terminating with an electrical contact exposed to an  
19 exterior of said first base through said orifice;

20 an electronic logic circuit borne by said plug, coupled to receive electrical data  
21 signals via said first and second electrical conductors, and generating control signals in dependence  
22 upon said electrical power and data signals; and

23 an electrical operator borne by said plug, disposed within one of said apertures, said  
24 operator having a distal member radially traveling along an axis transverse to said longitudinal  
25 axis, in dependence upon said control signals between a first position relative to said exterior  
26 surface by engaging said detent and thereby obstructing said movement in concert with said  
27 locking device and a second and different position relative to said exterior surface accommodating  
28 said movement.

1 7. (previously presented) The plug of claim 6, comprising said locking device, logic circuit  
2 and electrical operator simultaneously experiencing said rotation relative to the cylinder whenever  
3 said plug rotates relative to the cylinder.

1 8. (previously presented) The plug of claim 6, comprising said locking device, logic circuit

and electrical operator being wholly within the cylinder and travelling with said plug whenever said plug moves relative to the cylinder.

9. (previously presented) The plug of claim 6, with said electrical operator maintaining said distal member within said plug with said distal member extended not beyond said exterior surface while said distal member is in said second position, and maintaining said distal member in engagement with said detent while said distal member is in said first position.

10. (previously presented) The plug of claim 6, with said electrical operator maintaining said distal member within said plug with said distal member extending not beyond said exterior surface while said distal member is in said first position.

11. (previously presented) A lock, comprising:

- a shell containing a hollow recess defining a longitudinal axis and an interior cylindrical surface, said shell bearing a detent extending into said shell;
- a plug rotatable around said longitudinal axis while resident within said hollow recess, and a bar interposed between said shell and said plug generally along a radial plane engaging both said shell and said plug while obstructing rotation of said plug within said recess, said plug comprising:
  - a first base providing a first electrical conductor;
  - a second base separated by an axial length of said plug from said first base;
  - an exterior surface extending between and engaging said first base and said second base;
  - a locking device responsive to a key inserted into said keyway accommodating relative movement between said shell and said plug when the key while inserted into said keyway engages in a selected relation with said locking device and obstructing said relative movement absent said selected relation;
  - a second electrical conductor terminating with an electrical contact exposed

17 to an exterior of said first base through said orifice;

18 an electronic logic circuit coupled to receive electrical data signals via said  
19 first and second electrical conductors, and generating control signals in dependence upon  
20 said data signals; and

21 an electrical operator having a distal member moving relative to said detent,  
22 in dependence upon said control signals between a first orientation relative to said exterior  
23 surface enabling said relative movement and a second and different orientation relative to  
24 said exterior surface obstructing said relative movement when said distal member at least  
25 partially surrounds said detent.

1 12. (previously presented) The plug of claim 1, further comprised of said:

2 electrical operator comprising an electrical coil coaxially aligned with said distal  
3 member, to move said distal member between said second position and said first position in  
4 response to said control signals; and

5 said distal member bearing a circumferential surface blocking said relative  
6 movement while said distal member is in said second position, and a variation in said  
7 circumferential surface accommodating said relative movement while said distal member is in said  
8 first position.

1 13. (previously presented) The plug of claim 6, further comprised of said:

2 electrical operator comprising an electrical coil coaxially aligned with said distal  
3 member, to move said distal member between said second position and said first position in  
4 response to said control signals; and

5 distal member bearing a circumferential surface engaging said detent while said  
6 distal member is in said second position, and a variation in said circumferential surface  
7 accommodating said relative movement while said distal member is in said first position.

1 14. (previously presented) A lock, comprising:

2 a cylinder containing a hollow interior recess defining a longitudinal axis, and  
3 bearing a slot within said recess; and

4 a plug rotatable from a rest orientation around said longitudinal axis while resident  
5 within said hollow recess relative to said cylinder; and

6 a stationary detent positioned between said first end and second end while extending  
7 into said slot, and providing simultaneous engagement of said cylinder and said plug while said  
8 cylinder remains in said rest orientation;

9 said plug comprising:

10 a first base bearing an opening accommodating insertion of a key and  
11 providing a first electrical conductor;

12 a second base separated by an axial length of said plug from said first base,  
13 said second base disposed to support a cam, said mass being perforated by an aperture;

14 an exterior surface extending between said first base and said second base;  
15 retaining means oriented to retain a shank of a key inserted into said opening  
16 while said plug remains in an orientation other than said rest orientation relative to said  
17 cylinder, and to accommodate removal of the key from said opening while said plug is in  
18 said rest orientation;

19 a second electrical conductor terminating with an electrical contact exposed  
20 to an exterior of said first base through said orifice;

21 an electronic logic circuit comprising a memory storing a code, said circuit  
22 being borne by said plug and coupled to receive electrical data signals via said first and  
23 second electrical conductors, said circuit generating control signals in dependence upon  
24 correspondence between said code and information borne by said data signals; and

25 an electrical operator borne by said plug, said operator having a distal  
26 member travelling in dependence upon said control signals between a first position relative  
27 to said exterior surface maintaining engagement of said detent and a second and different  
28 position relative to said exterior surface accommodating movement between said plug and

29           said cylinder.

1           15. (previously presented) The lock of claim 14, further comprising:

2                 said detent being borne by said cylinder; and

3                 said distal member being oriented within said plug to move relative to said plug to  
4 accommodate rotation of said plug from said rest orientation relative to the cylinder when a key  
5 while inserted into said opening generates said data signals representing information having a  
6 selected said correspondence with said code, and obstructing said rotation absent said selected  
7 correspondence.

1           16. (previously presented) The lock of claim 14, further comprising:

2                 said detent comprising an arm arcuately engaging said cylinder and a tooth  
3 extending from said arm and through said slot; and

4                 said distal member being oriented within said plug to move relative to said plug to  
5 accommodate passage of said tooth relative to said distal member during rotation of said plug from  
6 said rest orientation relative to the cylinder when a key while inserted into said opening generates  
7 said data signals representing information having a selected said correspondence with said code,  
8 and obstructing said rotation of said plug from said rest orientation by engaging said tooth absent  
9 said selected correspondence.

1           17. (previously presented) The lock of claim 14, further comprising:

2                 said detent comprising an arm arcuately engaging said cylinder and a tooth  
3 extending from said arm and through said slot; and

4                 said distal member being oriented within said plug to move relative to said plug to  
5 accommodate passage of said tooth relative to said distal member during rotation of said plug from  
6 said rest orientation relative to the cylinder when a key while inserted into said opening generates  
7 said data signals representing information having a selected said correspondence with said code,  
8 obstructing said rotation of said plug from said rest orientation by engaging said tooth absent said

9 selected correspondence, and accommodating passage of said tooth relative to said distal member  
10 during rotation of said plug from an orientation other than said rest orientation to said rest  
11 orientation.

1 18. (previously presented) The lock of claim 14, further comprising:

2 said detent comprising an arm arcuately engaging said cylinder and a tooth  
3 extending from said arm and through said slot; and

4 said distal member being oriented within said plug to move relative to said plug to  
5 accommodate passage of said tooth relative to said distal member during rotation of said plug from  
6 said rest orientation relative to the cylinder when a key while inserted into said opening generates  
7 said data signals representing information having a selected said correspondence with said code,  
8 and obstructing said rotation of said plug from said rest orientation by engaging said tooth absent  
9 said selected correspondence when said rotation is in a first direction, and accommodating said  
10 rotation of said plug from said rest orientation despite an absence of said selected correspondence  
11 when said rotation is in a second and opposite direction.

1 19. (previously presented) The lock of claim 14, further comprising:

2 said detent comprising an arm arcuately engaging said cylinder and a tooth  
3 extending from said arm and through said slot; and

4 said distal member being oriented within said plug in an engagement of said tooth  
5 to obstruct said rotation of said plug from said rest orientation, and to move relative to said plug  
6 from said engagement of said tooth obstructing said rotation of said plug from said rest orientation  
7 to an accommodation of passage of said tooth relative to said distal member during rotation of said  
8 plug from said rest orientation relative to the cylinder when a key while inserted into said opening  
9 generates said data signals representing information having a selected said correspondence with  
10 said code, and continuing said accommodation despite intermittent removal of the key from said  
11 opening.

1           20. (previously presented) The lock of claim 14, further comprising:

2                 said detent comprising an arm arcuately engaging said cylinder and a tooth  
3 extending from said arm and through said slot; and

4                 said distal member being oriented within said plug in an engagement of said tooth  
5 to obstruct said rotation of said plug from said rest orientation, and to move relative to said plug  
6 from said engagement of said tooth obstructing said rotation of said plug from said rest orientation  
7 to an accommodation of passage of said tooth relative to said distal member during rotation of said  
8 plug from said rest orientation relative to the cylinder when a key while inserted into said keyway  
9 generates said data signals representing information having a selected said correspondence with  
10 said code, and continuing said accommodation despite intermittent removal of the key from said  
11 opening absent subsequent said generation of data signals representing information having said  
12 selected correspondence with said code.

1           21. (previously presented) The lock of claim 16, further comprising:

2                 a sidebar positioned between said first base and said second base to provide  
3 reciprocation between a first location with said sidebar providing simultaneous engagement with  
4 said plug and said cylinder, and a second location releasing said plug for rotation relative to the  
5 cylinder; and

6                 said electrical operator comprising an electrical solenoid borne by said plug, said  
7 distal member comprising an armature travelling in dependence upon said control signals between  
8 a third position relative to said exterior surface maintaining said simultaneous engagement and a  
9 fourth and different position relative to said exterior surface accommodating said reciprocation.

1           22. (previously presented) The lock of claim 17, further comprising:

2                 a sidebar positioned between said first base and said second base to provide  
3 reciprocation between a first location with said sidebar providing simultaneous engagement with  
4 said plug and said cylinder, and a second location releasing said plug for rotation relative to the

5 cylinder; and

6           said electrical operator comprising an electrical solenoid borne by said plug, said  
7 distal member comprising an armature travelling in dependence upon said control signals between  
8 a third position relative to said exterior surface maintaining said simultaneous engagement and a  
9 fourth and different position relative to said exterior surface accommodating said reciprocation.

1           23. (previously presented) The lock of claim 18, further comprising:

2           a sidebar positioned between said first base and said second base to provide  
3 reciprocation between a first location with said sidebar providing simultaneous engagement with  
4 said plug and said cylinder, and a second location releasing said plug for rotation relative to the  
5 cylinder; and

6           said electrical operator comprising an electrical solenoid borne by said plug, said  
7 distal member comprising an armature travelling in dependence upon said control signals between  
8 a third position relative to said exterior surface maintaining said simultaneous engagement and a  
9 fourth and different position relative to said exterior surface accommodating said reciprocation.

1           24. (previously presented) The lock of claim 19, further comprising:

2           a sidebar positioned between said first base and said second base to provide  
3 reciprocation between a first location with said sidebar providing simultaneous engagement with  
4 said plug and said cylinder, and a second location releasing said plug for rotation relative to the  
5 cylinder; and

6           said electrical operator comprising an electrical solenoid borne by said plug, said  
7 member comprising an distal armature travelling in dependence upon said control signals between  
8 a third position relative to said exterior surface maintaining said simultaneous engagement and a  
9 fourth and different position relative to said exterior surface accommodating said reciprocation.

1           25. (previously amended) A lock, comprising:

2           a shell containing a hollow recess defining a longitudinal axis and an interior



3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said  
5 hollow recess;

6 a stationary bar borne by said shell and interposed between said shell and said  
7 cylinder plug to create an obstruction to rotation of said cylinder plug within said recess;

8 said cylinder plug comprising:

9 a first base and a second base separated by an axial length of said cylinder plug from  
10 said first base, said second base configured to support a cam; and

11 an electrical operator borne by said cylinder plug and rotatable with said cylinder  
12 plug, said electrical operator being electrically operable to respond to a control signal by  
13 moving independently of said bar between one of a first orientation accommodating relative  
14 movement between said shell and said cylinder plug and a second and different orientation  
15 maintaining obstruction of said relative movement by engaging said bar, and another of  
16 said first orientation and said second orientation.

1 26. (previously amended) The lock of claim 25, further comprised of:

2 a logic circuit generating said control signal in response to a comparison between  
3 a code set within said logic circuit and a data signal applied to said logic circuit; and

4 said electrical operator moving between said second orientation and said first  
5 orientation in response to said control signal.

1 28. (previously amended) The lock of claim 27, further comprised of a locking mechanism  
2 borne by said cylinder plug, said cylinder plug being perforated by an aperture admitting reciprocal  
3 travel of a key relative to said locking mechanism, and said locking mechanism obstructing  
4 movement of said cylinder plug relative to said shell absent the key exhibiting a selected relation  
5 with said locking mechanism.

1           30. (previously amended) The lock of claim 25, further comprised of a power source to  
2 energize said electric operator, positioned to rotate with said cylinder plug relative to said shell.

1           31. (previously amended) The lock of claim 30, further comprised of said power source  
2 being mounted on a key.

1           32. (previously amended) The lock of claim 25, further comprised of a network of a  
2 plurality of cylinder plugs including said cylinder plug, and a switching device controlling  
3 operation of said network.

1           33. (previously amended) The lock of claim 32, with said switching device comprising a  
2 logic circuit.

1           34. (previously presented) The lock of claim 1, further comprised of said:  
2           electrical operator comprising an electrical coil moving said distal member, to  
3 reciprocate said distal member between said first position and said second position in response to  
4 said control signals; and  
5           said distal member bearing a circumferential surface blocking said radial movement  
6 of said sidebar while said distal member is in said second position, and accommodating said radial  
7 movement while said distal member is in said first position.

1           35. (previously presented) The lock of claim 6, further comprised of said:  
2           electrical operator comprising an electrical coil moving said distal member, to  
3 reciprocate said distal member between said first position and said second position in response to  
4 said control signals; and  
5           said distal member bearing a circumferential surface blocking said radial movement  
6 of said sidebar while said distal member is in said second position, and accommodating said radial  
7 movement while said distal member is in said first position.

1           36. (previously presented) The lock of claim 16, further comprising said distal member  
2 bearing a mass engaging said detent and blocking said rotation while said distal member is in said  
3 first position, and a groove through said mass accommodating relative passage between said distal  
4 member relative to said detent while said distal member is in said second position.

1           37. (previously presented) The lock of claim 16, further comprising said distal member  
2 bearing a mass exhibiting a first height accommodating relative passage between said distal  
3 member relative to said detent while said distal member is in said second position, and a second  
4 and greater height engaging and blocking said rotation while said distal member is in said first  
5 position.

1           38. (previously presented) The lock of claim 16, further comprising said distal member  
2 bearing a mass having a periphery engaging said detent and blocking said rotation while said distal  
3 member is in said first position, and a central variation in said mass relative to said periphery  
4 accommodating relative passage between said distal member and said detent while said distal  
member is in said second position.

1           39. (previously amended) The lock of claim 25, further comprising:  
2           a logic circuit generating said control signal in response to a comparison between  
3 a code set within said logic circuit and a data signal applied to said logic circuit;  
4           a conductor provided by said cylinder plug, conveying said data signal to said logic  
5 circuit; and  
6           said electrical operator moving from said second orientation to said first orientation  
7 in response to said control signal.

1           40. (previously amended) The lock of claim 39, with said conductor comprising an  
2 electrical conductor.

1 41. (previously amended) The lock of claim 25, further comprising:

2 a logic circuit borne by said cylinder plug, generating said control signal in response  
3 to a comparison between a code set within said logic circuit and a data signal applied to said logic  
4 circuit;

5 a conductor borne by said cylinder plug, conveying said data signal to said logic  
6 circuit; and

7 said electrical operator moving between said second orientation and said first  
8 orientation in response to said control signal.

1 42. (previously amended) The lock of claim 41, with said conductor comprising an  
2 electrical conductor.

1 46. (previously presented) A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior  
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said  
5 hollow recess;

6 a bar borne by said plug and rotatable with said plug relative to said shell, said bar  
7 being interposed between said shell and said cylinder plug to reciprocate generally along a radial  
8 plane between a first position engaging both said shell and said cylinder plug while obstructing  
9 rotation of said cylinder plug within said recess, and a second position accommodating said  
10 rotation, said cylinder plug comprising:

11 a first base and a second base separated by an axial length of said plug from said  
12 first base, said second base bearing means for supporting a cam; and

13 an electrical operator being electrically operable to respond to an electrical control  
14 signal by obstructing movement of said bar between said first position and said second position  
15 in response to a first state of said control signal and by moving within a second and different plane

16 not coextensive with said radial plane in response to application of said control signal to  
17 accommodate said movement of said bar in response to a second and different state of said control  
18 signal.

1 47. (previously presented) The lock of claim 46, further comprised of said operator directly  
2 obstructing movement of said bar between said first position and said second position absent said  
3 control signal.

1 48. (previously presented) The lock of claim 46, further comprised of:  
2 a logic circuit borne by said cylinder plug generating said control signal in response  
3 to a comparison between a code set within said logic circuit and a data signal applied to said logic  
4 circuit; and  
5 said electrical operator moving to accommodate said movement by said bar in  
6 response to said control signal.

1 49. (previously presented) The lock of claim 46, further comprised of a locking mechanism  
2 borne by said cylinder plug, said cylinder plug being perforated by an aperture admitting reciprocal  
3 travel of a key relative to said locking mechanism, and said locking mechanism obstructing  
4 movement of said cylinder plug relative to said shell absent the key exhibiting a selected relation  
5 with said locking mechanism.

1 50. (previously presented) The lock of claim 46, further comprised of a plurality of  
2 electrical conductors borne by said lock to engage a circuit in a key inserted into said cylinder plug.

1 51. (previously presented) The lock of claim 46, further comprised of a power source  
2 energizing said electric operator to move during said second and different state of said control  
3 signal, positioned to rotate with said cylinder plug relative to said shell.

1           52. (previously presented) The lock of claim 51, further comprised of said plug containing  
2 a keyway, and said power source being mounted on a key insertable into said keyway.

1           54. (previously presented) The lock of claim 46, further comprised of:  
2           said cylinder plug containing a keyway;  
3           a memory borne by said cylinder plug and storing a code; and  
4           a logic circuit comprising a memory storing a code, said circuit being borne by said  
5 cylinder plug and generating said control signal in dependence upon correspondence between said  
6 code and data borne by a key insertable within said keyway.

1           55. (previously amended) The lock of claim 25, further comprised of:  
2           said cylinder plug containing a keyway;  
3           a memory borne by said cylinder plug and storing a code; and  
4           a logic circuit comprising a memory storing a code, said circuit being borne by said  
5 cylinder plug and generating said control signal in dependence upon correspondence between said  
6 code and data borne by a key insertable within said keyway.

1           56. (previously presented) A lock, comprising:  
2           a shell containing a hollow recess defining a longitudinal axis and an interior  
3 cylindrical surface;  
4           a plug rotatable around said longitudinal axis while resident within said hollow  
5 recess;  
6           an elongate member interposed between said shell and said plug to travel generally  
7 along a radial direction between a first position where said elongate member obstructs rotation  
8 between said shell and said plug by making a direct simultaneous engagement of both said shell  
9 and said plug, and in response to a torque that is externally applied to said plug and causes rotation  
10 of said plug within said shell, exiting said recess and traveling to a second position while  
11 maintaining a second simultaneous engagement of said shell and said plug that accommodates said

12 rotation;

13 said plug comprising:

14 a first base perforated by an aperture, and a second base separated by an  
15 axial length of said plug from said first base, said second base bearing means for supporting  
16 a cam;

17 a logic circuit borne by said plug and rotatable with said plug, conveying  
18 said data signal between said aperture to said logic circuit; and

19 an electrical operator responding to said control signals by moving  
20 independently of said travel by said elongate member in a second direction within a plane  
21 that maintains said simultaneous engagement but is not aligned with said radial direction  
22 between one of a first orientation obstructing said travel and relative operable movement  
23 between said shell and said plug while said electrical operator is contained wholly within  
24 said plug, and a second and different orientation accommodating said travel and said  
25 relative operable movement between said shell and said plug, and another of said first  
26 orientation and said second orientation.

Claims 57-63. (Canceled)

1 64. (previously presented) A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior  
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said  
5 hollow recess, said cylinder plug comprising a first base and a second base separated by an axial

length of said cylinder plug from said first base, said second base bearing means for supporting a cam;

a sidebar interposed between said shell and said cylinder plug to travel generally along a radial plane between a first position engaging both said shell and said plug while obstructing rotation of said cylinder plug within said recess, and a second position accommodating said rotation;

a logic circuit generating an electrical control signal in response to a comparison between a code set within said logic circuit and a data signal applied to said logic circuit;

an electrical conductor provided by said plug, conveying said data signal to said logic circuit; and

an electrical operator borne by said cylinder plug and rotatable with said plug, said electrical operator being electrically operable to respond to said control signal by moving in a different plane independently of said travel by said sidebar, between one of a first orientation providing obstruction of said travel and a second and different orientation accommodating said travel, and another of said first orientation and said second orientation;

said sidebar having a first portion that is positioned to be optionally blocked by another component of said lock functioning independently of said electrical operator to prevent said travel of said sidebar, and a second portion that is positioned to be blocked from said travel by said sidebar to said second position whenever said electrical operator is within said first orientation, and a second portion that is positioned to be optionally blocked by another component of said lock.

65. (previously presented) A lock, comprising:

a shell containing a hollow recess defining a longitudinal axis and an interior cylindrical surface;

a cylinder plug rotatable around said longitudinal axis while resident within said hollow recess, said cylinder plug comprising a first base and a second base separated by an axial length of said cylinder plug from said first base, said second base bearing means for supporting a



7 cam;

8 a bar interposed between said shell and said cylinder plug to travel generally along  
9 a radial plane between a first position engaging both said shell and said plug while obstructing  
10 rotation of said cylinder plug within said recess, and a second position accommodating said  
11 rotation;

12 a logic circuit generating a control signal in response to a comparison between a  
13 code set within said logic circuit and a data signal applied to said logic circuit;

14 an electrical conductor provided by said plug, conveying said data signal to said  
15 logic circuit; and

16 an electrical operator comprising an armature, said armature being borne by said  
17 cylinder plug and rotating around said longitudinal axis with said plug, said electrical operator  
18 being electrically operable to respond to said control signal by moving independently of said travel,  
19 between one of a first orientation providing obstruction of said travel and a second and different  
20 orientation accommodating said travel, and another of said first orientation and said second  
21 orientation.

1 66. (previously presented) The lock of claim 65, with said electrical operator further  
2 comprising a coil of an electrically conducting material that is borne by said cylinder plug and  
3 wound to drive said armature to move from one of said first and second orientations to the other  
4 of said first and second orientations in response to said control signal.

1 67. (previously presented) The lock of claim 65, with said electrical operator further  
2 comprising a coil of an electrically conducting material that is borne by said cylinder plug and  
3 wound to drive said armature to move from said first orientation to said second orientation in  
4 response to said control signal.

1 68. (previously presented) The lock of claim 65, with electrical operator further  
2 comprising a coil of an electrically conducting material that is borne by said cylinder plug and

wound to drive said armature to rotate around an arc in response to said control signal.

69. (previously presented) The lock of claim 65, with said electrical operator further comprising a coil of an electrically conducting material that is borne by said cylinder plug and wound to drive said armature to reciprocate along a radial axis that is transverse to said radial plane in response to said control signal.

70. (previously presented) A lock, comprising:

a shell containing a hollow recess defining a longitudinal axis and an interior cylindrical surface;

a cylinder plug rotatable around said longitudinal axis while resident within said hollow recess, said cylinder plug comprising a first base and a second base separated by an axial length of said cylinder plug from said first base, said second base bearing means for supporting a cam;

a bar interposed between said shell and said cylinder plug to travel generally along a radial plane between a first position engaging both said shell and said plug while obstructing rotation of said cylinder plug within said recess, and a second position accommodating said rotation;

a logic circuit generating said control signal in response to a comparison between a code set within said logical circuit and a data signal applied to said logical circuit;

an electrical conductor provided by said plug, conveying said data signal to said logic circuit; and

an electrical operator borne by said cylinder plug and rotatable with said plug, said electrical operator being electrically operable to respond to an electrical control signal applied to said electrical operator by moving along a geometrical construct other than to said radial plane between one of a first orientation providing obstruction of said travel and a second and different orientation accommodating said travel, and another of said first orientation and said second orientation.

1           75. (previously presented) A lock, comprising:

2                 a shell containing a hollow recess defining a longitudinal axis and an interior  
3     cylindrical surface;

4                 a cylinder plug rotatable around said longitudinal axis while resident within said  
5     hollow recess, said cylinder plug comprising a first base and a second base separated by an axial  
6     length of said cylinder plug from said first base, said second base bearing means for supporting a  
7     cam;

8                 a bar interposed between said shell and said cylinder plug to travel generally along  
9     a radial plane between a first position engaging both said shell and said plug while obstructing  
10    rotation of said cylinder plug within said recess, and a second position accommodating said  
11    rotation;

12                a logic circuit generating a control signal in response to a comparison between a  
13    code set within said logic circuit and a data signal applied to said logic circuit;

14                an electrical conductor provided by said plug, conveying said data signal to said  
15    logic circuit; and

16                an electrical operator borne by said cylinder plug and rotatable with said plug, said  
17    electrical operator being electrically operable to respond to said control signal by moving along  
18    a radial axis that is transverse to said radial plane, between a first orientation providing obstruction  
19    of said travel and a second and different orientation accommodating said travel.

1           76. (previously presented) A lock, comprising:

2                 a shell containing a hollow recess defining a longitudinal axis and an interior  
3     cylindrical surface;

4                 a cylinder plug rotatable around said longitudinal axis while resident within said  
5     hollow recess, said cylinder plug comprising a first base and a second base separated by an axial  
6     length of said cylinder plug from said first base, said second base bearing means for supporting a  
7     cam;

8 a logic circuit generating said control signal in response to a comparison between  
9 a code set within said logic circuit and a data signal applied to said logic circuit;

10 an electrical conductor provided by said plug, conveying said data signal to said  
11 logic circuit;

12 an elongate bar exhibiting a greatest longitudinal dimension along a second axis that  
13 extends transversely to said first base and to said second base, said bar being interposed between  
14 said shell and said cylinder plug to travel generally along a radial axis that is transverse to said  
15 second axis, between a first position engaging both said shell and said plug while obstructing  
16 rotation of said cylinder plug within said recess, and a second position accommodating said  
17 rotation; and

18 an electrical operator borne by said cylinder plug and rotatable with said plug, said  
19 electrical operator being electrically operable to respond to said control signal by moving along  
20 said radial axis between one of a first orientation providing obstruction of said travel and a second  
21 and different orientation accommodating said travel, and another of said first orientation and said  
22 second orientation.

1 77. (previously presented) A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior  
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said  
5 hollow recess, said cylinder plug comprising a first base and a second base separated by an axial  
6 length of said cylinder plug from said first base, said second base bearing means for supporting a  
7 cam;

8 a logic circuit generating said control signal in response to a comparison between  
9 a code set within said logic circuit and a data signal applied to said logic circuit;

10 an electrical conductor provided by said plug, conveying said data signal to said  
11 logic circuit;

12 an elongate bar exhibiting a greatest longitudinal dimension along a second axis that

13 extends transversely to said first base and to said second base, said bar being interposed between  
14 said shell and said cylinder plug to travel generally along a radial axis that is radial to said cylinder  
15 plug and transverse to said second axis, between a first position engaging both said shell and said  
16 plug while obstructing rotation of said cylinder plug within said recess, and a second position  
17 accommodating said rotation; and

18 an electrical operator borne by said cylinder plug and rotatable with said plug, said  
19 electrical operator being electrically operable to respond to a control signal by moving between one  
20 of a first orientation providing obstruction of said travel and a second and different orientation  
21 accommodating said travel, and another of said first orientation and said second orientation.

1 82. (previously amended) The lock of claim 25, further comprised of a component biasing  
2 said bar to maintain said first position engaging both said shell and said plug.

1 83. (previously amended) The lock of claim 25, further comprised of a component biasing  
2 said electrical operator to maintain said second orientation providing obstruction of said bar.

1 84. (previously amended) The lock of claim 25, further comprised of:  
2 a first component biasing said bar to maintain said first position engaging both said shell  
3 and said plug; and  
4 a second component biasing said electrical operator to maintain said second orientation  
5 providing obstruction of said bar.

Claims 85-89. (Canceled)

1           90. (previously presented) A process of retrofitting a mechanical cylinder lock to form an  
2 electromechanical cylinder lock, the process comprising steps of:

3           providing a mechanical cylinder lock including an outer shell with a bore, a first rotatable  
4 barrel located in the bore, and a side bar for preventing and permitting rotation of the barrel within  
5 the bore in the shell;

6           removing the first barrel from the shell;

7           providing an electronically powered rotatable barrel having an exterior adapted to  
8 substantially correspond to the bore in the shell, and including:

9           at least one electromechanical locking member disposed in the barrel, the electromechanical  
10 locking member being positionable to permit the side bar to engage the locking member in a non-  
11 barrel blocking position which permits the barrel to rotate with respect to the shell, and the  
12 electromechanical locking member also being positionable in a barrel blocking position which  
13 blocks rotation of the barrel with respect to the shell; and

14           an electronically powered drive mechanism cooperating with the electromechanical locking  
15 member to selectively move the locking member from the barrel blocking position to the non-  
16 barrel blocking position in which the side bar engages the locking member to rotate the barrel and  
17 operate the lock; and

18           securing the electronically powered rotatable barrel in the bore in the shell to form an  
19 electromechanical cylinder lock, the lock including control means carried by at least one of the  
20 barrel and bore for energizing the electronically powered drive mechanism in response to an  
21 authorized attempt to open the lock.

1           91. (previously presented) A lock, comprising:

2           a shell containing a hollow recess defining a longitudinal axis and an interior  
3 cylindrical surface;

4           a cylinder plug rotatable around said longitudinal axis while resident within said  
5 hollow recess, said cylinder plug comprising a first base perforated by a keyway and a second base  
6 separated by an axial length of said cylinder plug from said first base, said second base disposed

7 to support a cam;

8 a bar interposed between said shell and said cylinder plug to reciprocate generally  
9 along a radial plane between a first position engaging both said shell and said plug while  
10 obstructing rotation of said cylinder plug within said recess, and a second position accommodating  
11 said rotation when a torque is externally applied to said keyway to rotate said cylinder plug within  
12 said shell;

13 a locking mechanism borne by and rotating with said cylinder plug, said locking  
14 mechanism being interposed between said cylinder plug and said bar, and exhibiting a first  
15 disposition hindering said reciprocation and, in response to insertion of a key in physical  
16 conformance to said locking mechanism, exhibiting a second and different disposition  
17 accommodating said reciprocation; and

18 an electrical operator borne by said cylinder plug and rotatable with said cylinder  
19 plug, said electrical operator being electrically operable to respond to a control signal by moving  
20 independently of said bar between a first orientation providing obstruction of said reciprocation  
21 by said bar and a second and different orientation removing said obstruction.

1 92. (previously presented) A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior  
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said  
5 hollow recess;

6 a bar interposed between said shell and said cylinder plug to extend generally along  
7 a radial plane between a first state engaging both said shell and said plug while obstructing rotation  
8 of said cylinder plug within said recess, and a second state accommodating said rotation;

9 said cylinder plug comprising:

10 a first base and a second base separated by an axial length of said cylinder plug from  
11 said first base, said second base configured to support a cam; and

12 an electrical operator comprising an armature borne by said cylinder plug and

13 rotatable with said cylinder plug, said electrical operator being electrically operable to  
14 respond to a control signal by moving said armature independently of said bar, between one  
15 of a first orientation providing obstruction of said rotation during said first state and a  
16 second orientation accommodating independent relative movement between said bar and  
17 said cylinder plug, and another of said first orientation and said second orientation.

1 93. (previously presented) The lock of claim 92, further comprised of:

2 a coil wound to provide conduction of an electrical current in response to said  
3 control signal; and

4 said armature comprising an exterior surface exhibiting a rest position between said  
5 shell and said cylinder plug, said armature obstructing said rotation absent said conduction,  
6 accommodating said rotation during said conduction, and accommodating said rotation until said  
7 rotation returns said armature to said rest position after termination of said conduction.

1 95. (previously presented) The lock of claim 92, further comprised of:

2 a coil wound to provide conduction of an electrical current in response to said  
3 control signal; and

4 said armature comprising an exterior surface exhibiting a rest position between said  
5 bar and said cylinder plug, said armature obstructing said rotation absent said conduction, said  
6 armature accommodating said rotation during said conduction, and said armature accommodating  
7 said rotation until said rotation returns said armature to said rest position after termination of said  
8 conduction.

1 96. (previously presented) The lock of claim 92, further comprised of:

2 a coil wound to provide conduction of an electrical current in response to said  
3 control signal; and

4 said armature comprising an exterior surface exhibiting a rest position with said first



5 orientation while said exterior surface is interposed between said bar and said cylinder plug and  
6 obstructs said rotation absent said conduction, said armature assuming said second orientation,  
7 withdrawing from said interposition and accommodating said rotation during said conduction, and  
8 said armature accommodating said rotation until said rotation returns said armature to said rest  
9 position with said first orientation after termination of said conduction.

1 97. (previously presented) The lock of claim 92, further comprised of:

2 a coil wound to provide conduction of an electrical current in response to said  
3 control signal; and

4 said armature comprising an exterior surface exhibiting a rest position with said first  
5 orientation while said exterior surface is interposed between said bar and said cylinder plug and  
6 obstructs said rotation absent said conduction, said armature assuming said second orientation,  
7 withdrawing from said interposition and accommodating said rotation during said conduction, and  
8 said armature maintaining said second orientation and accommodating said rotation after said  
9 rotation returns said armature to said rest position after termination of said conduction.

1 98. (previously presented) The lock of claim 92, further comprised of:

2 a coil wound to provide conduction of an electrical current in response to said  
3 control signal; and

4 said armature comprising an exterior surface exhibiting a rest position with said first  
5 orientation while said exterior surface is interposed between said bar and said cylinder plug and  
6 obstructs said rotation absent said conduction, said armature assuming said second orientation,  
7 withdrawing from said interposition and accommodating said rotation during said conduction, said  
8 armature maintaining said second orientation and accommodating said rotation after said rotation  
9 returns said armature to said rest position after termination of said conduction, and said armature  
10 resuming said first orientation during renewal of said conduction subsequent to said termination.

1           99. (previously presented) The lock of claim 92, further comprised of:

2                   a coil wound to provide conduction of an electrical current in response to said  
3 control signal; and

4                   said armature comprising an exterior surface exhibiting a rest position while in said  
5 first orientation absent said conduction with a first thickness of said exterior surface interposed  
6 between said bar and said cylinder plug and with said cylinder plug in alignment with said shell  
7 in a locked position, said armature exhibiting said second orientation and accommodating said  
8 rotation during said conduction with a second and lesser thickness of said exterior surface  
9 permitting movement of said bar relative to said cylinder plug, and said armature accommodating  
10 said rotation until said rotation allows said bar to reverse said relative movement and said armature  
11 to return to said rest position after termination of said conduction.

1           100. (previously presented) The lock of claim 92, further comprised of:

2                   a logic circuit borne by said cylinder plug, generating said control signal in response  
3 to a comparison between a code set within said logic circuit and a data signal applied to said logic  
4 circuit; and

5                   said electrical operator moving between said second orientation and said first  
6 orientation in response to said control signal.

Claims 101-104. (Canceled)

1           105. (previously presented) The process of claim 90, further comprising:

2                   orienting said side bar to travel along a plane that extends approximately radially  
3 relative to said electronically powered rotatable barrel when engaging said locking member; and

4                    positioning said locking member to move on an axis that is approximately  
5 perpendicular to said plane when said locking member is selectively moved from said barrel  
6 blocking position to said non-barrel blocking position.

1                    106. (previously presented) The lock of claim 14, further comprising said bar engaging  
2 both said shell and said plug during said movement between said plug and said cylinder.

1                    107. (previously amended) The lock of claim 25, further comprising said bar engaging both  
2 said shell and said cylinder plug during said rotation.

1                    108. (previously presented) The lock of claim 46, further comprising said bar engaging  
2 both said shell and said cylinder plug during said rotation.

1                    109. (previously presented) The lock of claim 64, further comprising said sidebar engaging  
2 both said shell and said cylinder plug during said rotation.

1                    110. (previously amended) The lock of claim 65, further comprising said bar engaging both  
2 said shell and said cylinder plug during said rotation.

1                    111. (previously presented) The lock of claim 70, further comprising said bar engaging  
2 both said shell and said cylinder plug during said rotation.

1                    112. (previously presented) The lock of claim 75, further comprising said bar engaging  
2 both said shell and said cylinder plug during said rotation.

1                    113. (previously presented) The lock of claim 76, further comprising said bar engaging  
2 both said shell and said cylinder plug during said rotation.

1 114. (previously presented) The lock of claim 77, further comprising said bar engaging  
2 both said shell and said cylinder plug during said rotation.

1 115. (previously presented) The lock of claim 85, further comprising said side bar  
2 engaging both said shell and said barrel during said rotation.

1 116. (previously presented) The lock of claim 91, further comprising said bar engaging  
2 both said shell and said cylinder plug during said rotation.

Claims 117-118. (Canceled)

1 119. (previously presented) The lock cylinder of claim 85, in which said side bar moves  
2 out of the cavity and engages the locking member to rotate the barrel and operate the lock.

1 120. (previously presented) A rotatable lock barrel for insertion into a lock cylinder having  
2 a bore formed therein, the barrel comprising:

3 an elongated, generally cylindrically shaped barrel member having an exterior configured  
4 for receipt in a bore of a lock cylinder and an interior containing a plurality of electromechanical  
5 locking members, the barrel member having a recess formed therein;

6 wherein the locking members are disposed in the recess of the barrel member and are  
7 substantially entirely contained within the barrel member, each of the locking members including  
8 a groove and the locking members being movable to a position in which the grooves of the locking  
9 members are aligned;

10 the recess in said barrel member being configured to receive at least a portion of a movable  
11 side bar of a lock cylinder to permit the side bar to move into and out of engagement with the  
12 grooves of the locking members for selectively permitting and blocking rotation of the barrel

13 member with respect to a lock cylinder when positioned therein;

14 an electronically powered drive mechanism located within the barrel member for moving  
15 the electromechanical locking members to a position in which the grooves of the locking members  
16 are aligned.

1 121. (previously presented) A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior  
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said  
5 hollow recess;

6 a bar interposed between said shell and a cylinder plug detent extending radially  
7 from a second recess within said shell into a passage within said cylinder plug to create an  
8 obstruction to rotation of said cylinder plug within said hollow recess;

9 said cylinder plug comprising:

10 a first base and a second base separated by an axial length of said cylinder plug from  
11 said first base, said second base configured to support a cam; and

12 an electrical operator borne by said cylinder plug and rotatable with said cylinder  
13 plug, said electrical operator being electrically operable to respond to a control signal by  
14 moving independently of said detent between one of a first orientation accommodating  
15 relative movement between said detent and said cylinder plug and a second and different  
16 orientation maintaining obstruction of said relative movement by engaging said detent, and  
another of said first orientation and said second orientation.

## IX. EVIDENCE APPENDIX

**References cited by both Appellant and the Examiner during examination of Appellant's co-pending U.S. Serial No. 11/892305 and during examination of this Application.**

Pursuant to 37 CFR §1.56, §1.97 and §1.98, and the guidance stated in §2001.06(b) of the *Manual of Patent Examining Procedure*, 8<sup>th</sup> Ed., Rev. 2 (May 2004), if an "application under examination is identified as a continuation divisional, or continuation-in-part of an earlier application, the examiner will consider the prior art cited in the earlier application." The following references are evidence that is a part of the administrative record of the prosecution history of this application:

### U.S. References:

US 6,684,671 to Beylotte *et al.*, issued on 3 February 2004.<sup>610</sup>

US 6,615,625 to Davis, issued on 9 September 2003.<sup>611</sup>

US 6,564,601 to Hyatt Jr., issued on 20 May 2003.<sup>612</sup>

US 6,552,650 to Gokcebay, *et al.*, issued on 22 April 2003.<sup>613</sup>

US 6,374,653 to Gokcebay, *et al.*, issued on 23 April 2002.<sup>614</sup>

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<sup>610</sup> Information Disclosure Statement, filed on 22 June 2004.  
Information Disclosure Statement, filed on 24 September 2004.

<sup>611</sup> Information Disclosure Statement, filed on 22 June 2004.  
Information Disclosure Statement, filed on 24 September 2004.

<sup>612</sup> Final Office Action (Paper No. 53, date mailed 13 June 2003).  
Appeal Brief, filed on 3 June 2004.  
Corrected Appeal Brief, filed on 18 October 2004.  
Third Appeal Brief, filed on 25 October 2004.  
Fourth Appeal Brief, filed on 18 April 2005.

<sup>613</sup> Information Disclosure Statement, filed on 25 October 2004.

<sup>614</sup> Information Disclosure Statement, filed on 25 October 2004.

US 6,363,762 to Kueng, issued on 2 April 2002.<sup>615</sup>

US 6,000,609 to Gokcebay, *et al.*, issued in December 1999.<sup>616</sup>

US 5,839,307 to Field, *et al.*, issued on 24 November 1998.<sup>617</sup>

US 5,839,305 to Aston, issued in November 1998.<sup>618</sup>

US 5,749,253 to Glick, *et al.*, issued in May 1998.<sup>619</sup>

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<sup>615</sup> Information Disclosure Statement, filed on 25 October 2004.

<sup>616</sup> Information Disclosure Statement, filed on 14 January 2000.  
Interview Summary (Paper No. 32, date mailed *unknown*).  
Supplemental Amendment, page 24, filed on 24 April 2000.  
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<sup>617</sup> Office Action and Notice of References Cited (Paper No. 17, date mailed 21 January 1999).  
Second Supplemental Amendment, page 6, filed on 17 August 1999.  
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Interview Summary (Paper No. 32, date mailed *unknown*).  
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Petition, page 2-3, filed on 26 April 2000.  
Decision on Petition (Paper No. 36, date mailed 19 September 2000).  
Corrected Decision on Petition (Paper No. 37, date mailed 11 October 2000).  
Letter addressed to Examiner Boucher, date mailed and faxed on 6 March 2001.  
Interview Summary (Paper No. 40, date mailed 30 March 2001).  
Amendment filed on 13 April 2001.  
Office Communication (Paper No. 52, date mailed on 13 June 2003).  
Response, filed on 14 July 2003.  
Amendment, page 39-42, filed on 3 June 2004.  
Appeal Brief, filed on 3 June 2004.  
Amendment, filed on 24 September 2004.  
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## **X. RELATED PROCEEDINGS APPENDIX**

In Application Serial No. **10/440308** which is a Continuation of Application Serial No. 10/061202, which is a Continuation of the present application, a Notice of Appeal was filed on 8 November 2004. On 19 February 2009, a Decision was mailed, in which Appellant's Petition to enter the Reply Brief and the Substitute Reply Brief filed on 7 July 2006 and 11 October 2006, respectively, was denied.

In Application Serial No. **11/892305** which is a Divisional of the present application, a Notice of Appeal was filed on 10 November 2008. On 27 January 2009, a Notification of Non-Compliant Appeal Brief (Paper No. 20090122) was issued in response to the Appeal Brief filed on 9 December 2008. A substitute Appeal Brief in response to the Notification of 27 January 2009 was filed on 27 May 2009 and has been forwarded to the Examiner.